

Q2 2024 RESEARCH UPDATE

24 JUNE 2024



ON TODAY'S CALL



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AGENDA Q2 2024

WELCOMING REMARKS

- Dr. Christian Thun, European DataWarehouse

MEET EDWARD: USE AI TO ACCESS LOAN-LEVEL DATA

- Gopala Sankaran, European DataWarehouse

EDW PUBLICATIONS

- Ludovic Thebault, European DataWarehouse

EPC RATINGS AND MORTGAGE PERFORMANCE

- Ludovic Thebault, European DataWarehouse

NEW CO₂ LABELLING ORDINANCE FOR CARS IN GERMANY

- Usman Jamil, European DataWarehouse

PROXY DATA

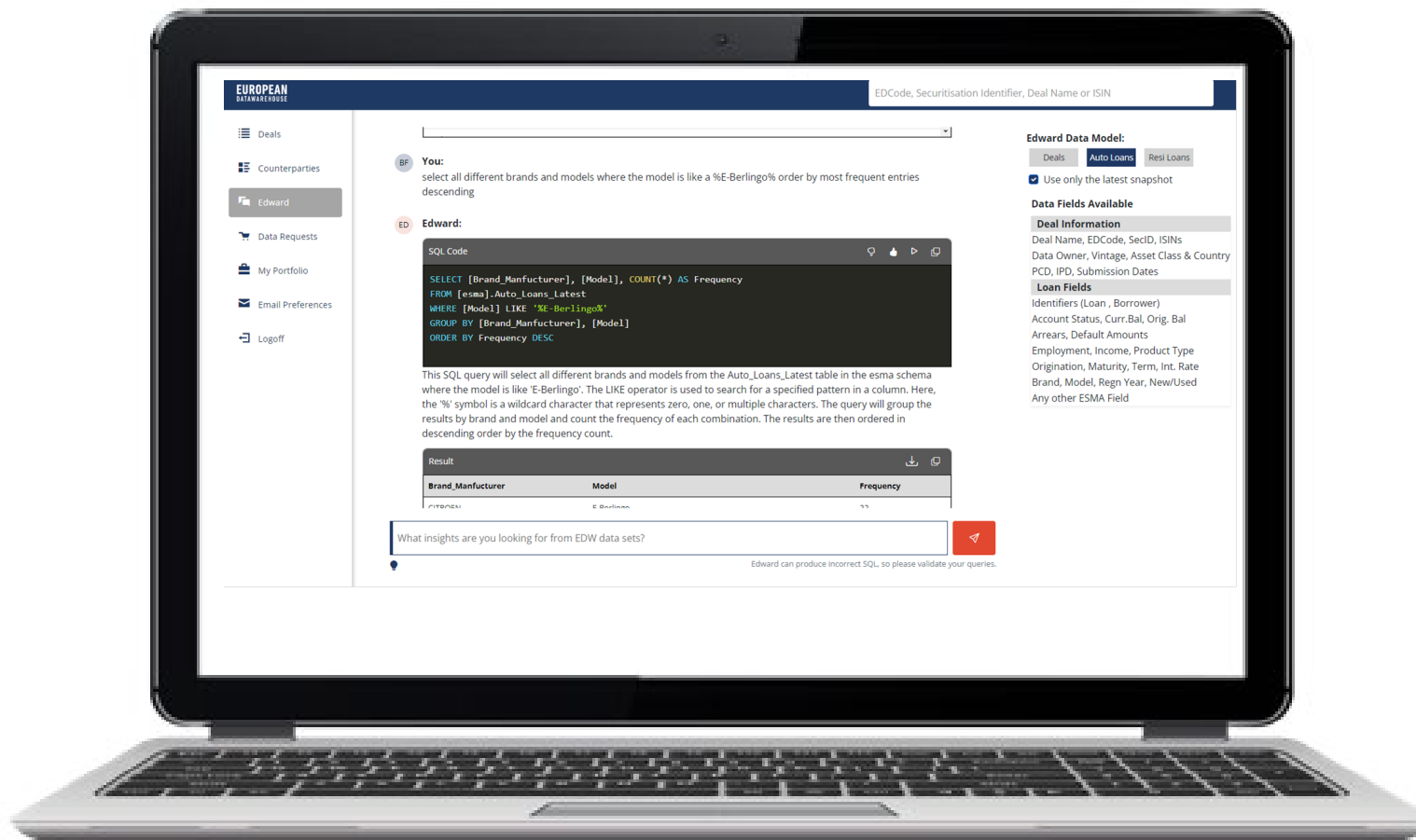
- Usman Jamil, European DataWarehouse

Q & A

MEET EDWARD: USE AI TO ACCESS LOAN-LEVEL DATA

EDWARD

EDW artificial intelligence assistant



EDWARD

EDW artificial intelligence assistant

Deals

Counterparties

Edward

Data Requests

My Portfolio

Email Preferences

Logout

BF

You:

select all different brands and models where the model is like a %E-Berlingo% order by most frequent entries descending

ED

Edward:

```
SQL Code
SELECT [Brand_Manufacturer], [Model], COUNT(*) AS Frequency
FROM [esma].Auto_Loans_Latest
WHERE [Model] LIKE '%E-Berlingo%'
GROUP BY [Brand_Manufacturer], [Model]
ORDER BY Frequency DESC
```

This SQL query will select all different brands and models from the Auto_Loans_Latest table in the esma schema where the model is like 'E-Berlingo'. The LIKE operator is used to search for a specified pattern in a column. Here, the '%' symbol is a wildcard character that represents zero, one, or multiple characters. The query will group the results by brand and model and count the frequency of each combination. The results are then ordered in descending order by the frequency count.

Brand_Manufacturer	Model	Frequency
CITROEN	E-Berlingo	??

What insights are you looking for from EDW data sets?



Edward can produce incorrect SQL, so please validate your queries.

Edward Data Model:

Deals **Auto Loans** Resi Loans

Use only the latest snapshot

Data Fields Available

Deal Information



Deal Name, EDCode, SecID, ISINs
Data Owner, Vintage, Asset Class & Country
PCD, IPD, Submission Dates

Loan Fields

Identifiers (Loan, Borrower)
Account Status, Curr.Bal, Orig. Bal
Arrears, Default Amounts
Employment, Income, Product Type
Origination, Maturity, Term, Int. Rate
Brand, Model, Regn Year, New/Used
Any other ESMA Field

EDWARD

EDW artificial intelligence assistant

Result				
Brand_Manufacturer	Model	Frequency		
CITROEN	E-Berlingo	22		
Citroen	E-BERLINGO 50 KWH M SHINE PACK	3		
Citroen	E-BERLINGO FULL ELECTRIC	3		
CITROEN	e-Berlingo PKW	2		
Citroen	e-Berlingo Van	2		
Citroen	E-BERLINGO XL CLUB	1		
Citroen	E-BERLINGO M EL	1		
CITROEN	E-Berlingo Multispace	1		

EDWARD

EDW artificial intelligence assistant

EUROPEAN
DATAWAREHOUSE

EDCode, Securitisation Identifier, Deal Name or ISIN

☰ Deals

☰ Counterparties

Edward

🛒 Data Requests

📁 My Portfolio

✉ Email Preferences

🚪 Logout

13652215.3847

BF

You:

What is the average income of a volkswagen golf owner? Ignore incomes in excess of 1000000

ED

Edward:

SQL Code

```
SELECT AVG(NULLIF([Prmry_Income], 0)) AS Avg_Income
FROM [esma].Auto_Loans_Latest
WHERE [Model] LIKE '%golf%'
AND [Brand_Manufacturer] LIKE '%volkswagen%'
AND [Prmry_Income] <= 1000000
```

This query calculates the average primary income of Volkswagen Golf owners, excluding those with incomes exceeding 1,000,000. The NULLIF function is used to avoid division by zero errors. The LIKE operator is used to filter for the model and brand manufacturer.

Result

Avg_Income

27625.1506

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Edward Data Model:

Deals

Auto Loans

Resi Loans

Use only the latest snapshot

Data Fields Available

Deal Information

Deal Name, EDCode, SecID, ISINs
Data Owner, Vintage, Asset Class & Country
PCD, IPD, Submission Dates

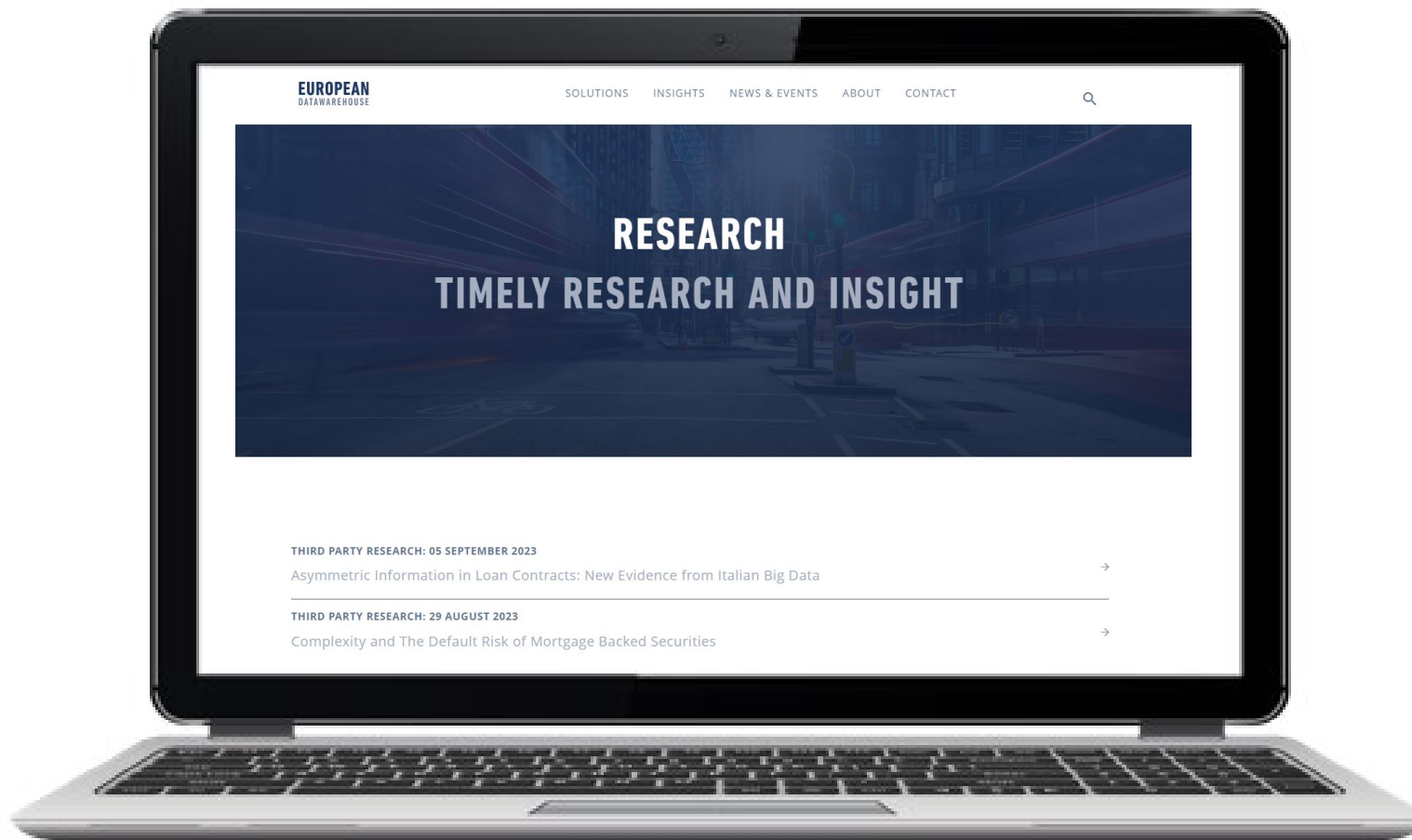
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Identifiers (Loan , Borrower)
Account Status, Curr.Bal, Orig. Bal
Arrears, Default Amounts
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EDW PUBLICATIONS

RESEARCH SECTION

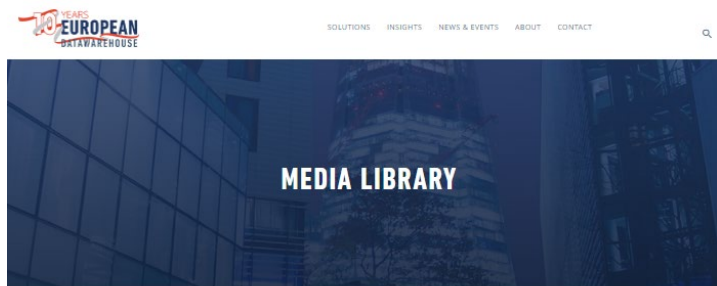
Our own publications, plus third-party research: <https://eurodw.eu/knowledge/research/>




<https://eurodw.eu/knowledge/magazine/>

LIST OF RESEARCH PUBLICATIONS


Our own publications, plus third-party research: [Media Library - European DataWarehouse \(eurodw.eu\)](https://eurodw.eu)




VIDEOS




What is European DataWarehouse?




European DataWarehouse on the Securitisation Regulation (condensed version)




European DataWarehouse named "2022 Securitisation Data Provider of the Year"



European DataWarehouse on the Securitisation Regulation (full length version)



European DataWarehouse on the Securitisation Regulation (versión reducida en español)



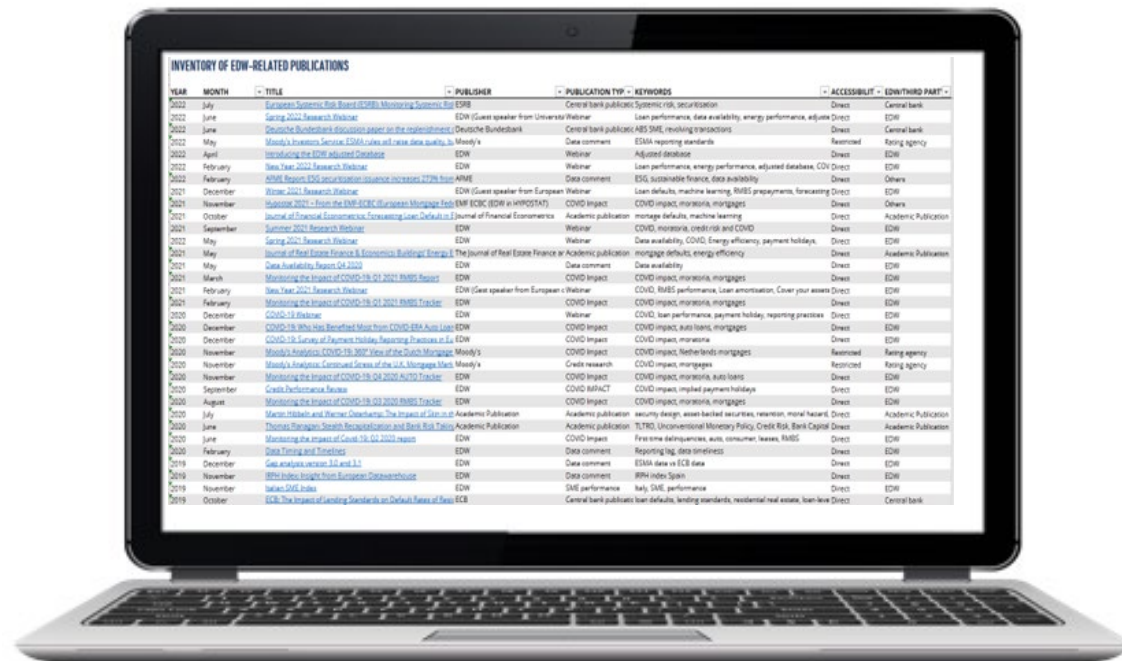
European DataWarehouse sobre el nuevo reglamento de titulización (versión completa en español)

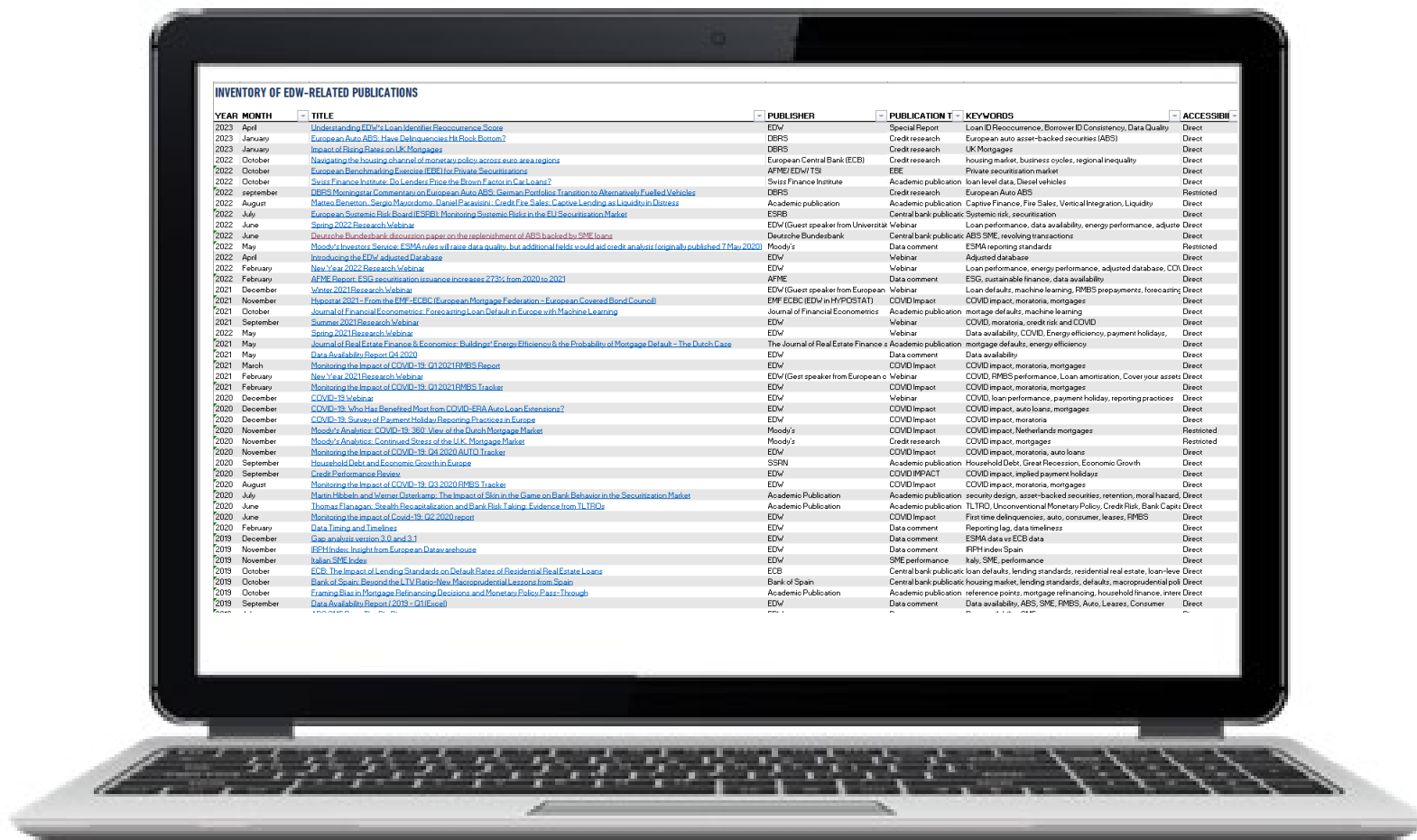
SHOW MORE

CORPORATE INFORMATION AND PUBLICATIONS

19 AUGUST 2022
Corporate Presentation

<https://eurodw.eu/about-us/media-library/>





INVENTORY OF EDW-RELATED PUBLICATIONS

YEAR	MONTH	TITLE	PUBLISHER	PUBLICATION TYPE	KEYWORDS	ACCESSION
2023	April	Understanding ECU's Loan-Member Resurgence Score	EDW	Special Report	Loan ID Resurgence, Borrower ID Consistency, Data Quality	Direct
2023	January	European Auto ABS: Have Delinquencies Hit Rock Bottom?	DBRS	Credit research	European auto asset-backed securities (ABS)	Direct
2023	January	Impact of Rising Rates on UK Mortgages	DBRS	Credit research	UK Mortgages	Direct
2022	October	Navigating the housing channel of monetary policy across euro area regions	European Central Bank (ECB)	Credit research	housing market, business cycles, regional inequality	Direct
2022	October	European Benchmarking Exercise (EBE) for Private Securitization	AFME/EDW/TS	EBE	Private securitization market	Direct
2022	October	Swiss Finance Institute: Do Lenders Face the Brown Factor in Car Loans?	Swiss Finance Institute	Academic publication	loan/lead data, Diesel-vehicles	Direct
2022	September	DBRS Morningstar Comment on European Auto ABS, German Portfolio Transition to Alternative Fuelled Vehicles	DBRS	Credit research	European Auto ABS	Restricted
2022	August	Mateo Denton, Sergio Mayordomo, Daniel Paravani: Credit Fire Sales, Captive Lending as Liquidity in Distress	Academic publication	Academic publication	Captive Finance, Fire Sales, Vertical Integration, Liquidity	Direct
2022	July	European Systemic Risk Board (ESRB): Monitoring Systemic Risks in the EU Securitization Market	ESRB	Central bank publicat	Systemic risk, securitization	Direct
2022	June	Spring 2022 Research Webinar	EDW (Guest speaker from Universitat	Webinar	Loan performance, data availability, energy performance, adjuste	Direct
2022	June	Deutsche Bundesbank: discussion paper on the replenishment of ABS backed by SME loans	Deutsche Bundesbank	Central bank publicat	ABS SME, revolving transactions	Direct
2022	May	Moody's Investor Service: ESMA rules will raise data quality, but additional fields would aid credit analysis (originally published 7 Jul 2020)	Moody's	Data comment	ESMA reporting standards	Restricted
2022	April	Introducing the EDW advanced Database	EDW	Webinar	Adjusted database	Direct
2022	February	New Year 2022 Research Webinar	EDW	Webinar	Loan performance, energy performance, adjusted database, CO	Direct
2022	February	AFME Report: ESG securitisation insurance increases 270% from 2020 to 2021	AFME	Data comment	ESG, sustainable finance, data availability	Direct
2021	December	Winter 2021 Research Webinar	EDW (Guest speaker from European	Webinar	Loan defaults, machine learning, RMBS prepayments, forecasting	Direct
2021	November	Huysier 2021: From the EBF-ECBC European Mortgage Federation – European Covered Bond Council	EBF/ECBC (EDW in-house/STAT)	COVID Impact	COVID impact, moratoria, mortgages	Direct
2021	October	Journal of Financial Econometrics: Forecasting Loan Default in Europe with Machine Learning	Journal of Financial Econometrics	Academic publication	mortgage defaults, machine learning	Direct
2021	September	Summer 2021 Research Webinar	EDW	Webinar	COVID, moratoria, credit risk and COVID	Direct
2022	May	Spring 2021 Research Webinar	EDW	Webinar	Data availability, COVID, Energy efficiency, payment holidays,	Direct
2021	May	Journal of Real Estate Finance & Economics: Building Energy Efficiency & the Probability of Mortgage Default – The Dutch Case	The Journal of Real Estate Finance	Academic publication	mortgage defaults, energy efficiency	Direct
2021	May	Data Availability Report Q4 2020	EDW	Data comment	Data availability	Direct
2021	March	Monitoring the Impact of COVID-19: Q1 2021 RMBS Report	EDW	COVID Impact	COVID impact, moratoria, mortgages	Direct
2021	February	New Year 2021 Research Webinar	EDW (Guest speaker from European	Webinar	COVID, RMBS performance, Loan amortization, Cover your assets	Direct
2021	February	Monitoring the Impact of COVID-19: Q1 2021 RMBS Tracker	EDW	COVID Impact	COVID impact, moratoria, mortgages	Direct
2020	December	COVID-19 Webinar	EDW	Webinar	COVID, loan performance, payment holiday, reporting practices	Direct
2020	December	COVID-19: Who Has Benefited Most from COVID-EPA Auto Loan Extensions?	EDW	COVID Impact	COVID impact, auto loans, mortgages	Direct
2020	December	COVID-19: Survey of Payment Holiday Reporting Practices in Europe	EDW	COVID Impact	COVID impact, moratoria	Direct
2020	November	Moody's Analysis: COVID-19: 3Q: View of the Dutch Mortgage Market	Moody's	COVID Impact	COVID impact, Netherlands mortgages	Restricted
2020	November	Moody's Analysis: Continued Stress of the UK Mortgage Market	Moody's	Credit research	COVID impact, mortgages	Restricted
2020	November	Monitoring the Impact of COVID-19: Q4 2020 ALTO Tracker	EDW	COVID Impact	COVID impact, moratoria, auto loans	Direct
2020	September	Household Debt and Economic Growth in Europe	SRFR	Academic publication	Household Debt, Great Recession, Economic Growth	Direct
2020	September	Crack Performance Review	EDW	COVID IMPACT	COVID impact, implied payment holidays	Direct
2020	August	Monitoring the Impact of COVID-19: Q3 2020 RMBS Tracker	EDW	COVID Impact	COVID impact, moratoria, mortgages	Direct
2020	July	Martin Hibbeln and Valmet Osterkamp: The Impact of Skin in the Game on Bank Behavior in the Securitization Market	Academic Publication	Academic publication	security design, asset-backed securities, retention, moral hazard	Direct
2020	June	Thomas Flanagan: Search Recast allocation and Bank Risk Taking: Evidence from TLTRQ	Academic Publication	Academic publication	TLTRQ, Unconventional Monetary Policy, Credit Risk, Bank Capit	Direct
2020	June	Monitoring the Impact of Covid-19: Q2 2020 report	EDW	COVID Impact	Fast new delinquencies, auto, consumer, leases, RMBS	Direct
2020	February	Data Timing and Timeliness	EDW	Data comment	Reporting lag, data timeliness	Direct
2019	December	Gap analysis version 3.0 and 3.1	EDW	Data comment	ESMA data vs ECB data	Direct
2019	November	IRPH Index: Insight from European Datawarehouse	EDW	Data comment	IRPH Index Spain	Direct
2019	November	Italy: SME Index	EDW	SME performance	Italy, SME performance	Direct
2019	October	ECB: The Impact of Lending Standards on Default Rates of Residential Real Estate Loans	ECB	Central bank publicat	loan defaults, lending standards, residential real estate, loan-level	Direct
2019	October	Bank of Spain: Beyond the LTV Ratio: New Macroeconometric Lessons from Spain	Bank of Spain	Central bank publicat	housing market, lending standards, defaults, macroprudential poli	Direct
2019	October	Framing Bias in Mortgage Refinancing Decisions and Monetary Policy Pass-Through	Academic Publication	Academic publication	reference points, mortgage refinancing, household finance, inter	Direct
2018	September	Data Availability Report 2019 – DTE(Ecol)	EDW	Data comment	Data availability, ABS, SME, RMBS, Auto, Leases, Consumer	Direct

Excel Available in our Media Library Section

BLOG

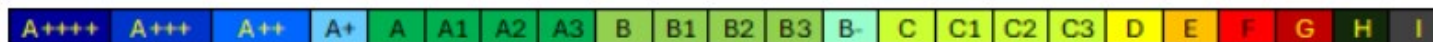
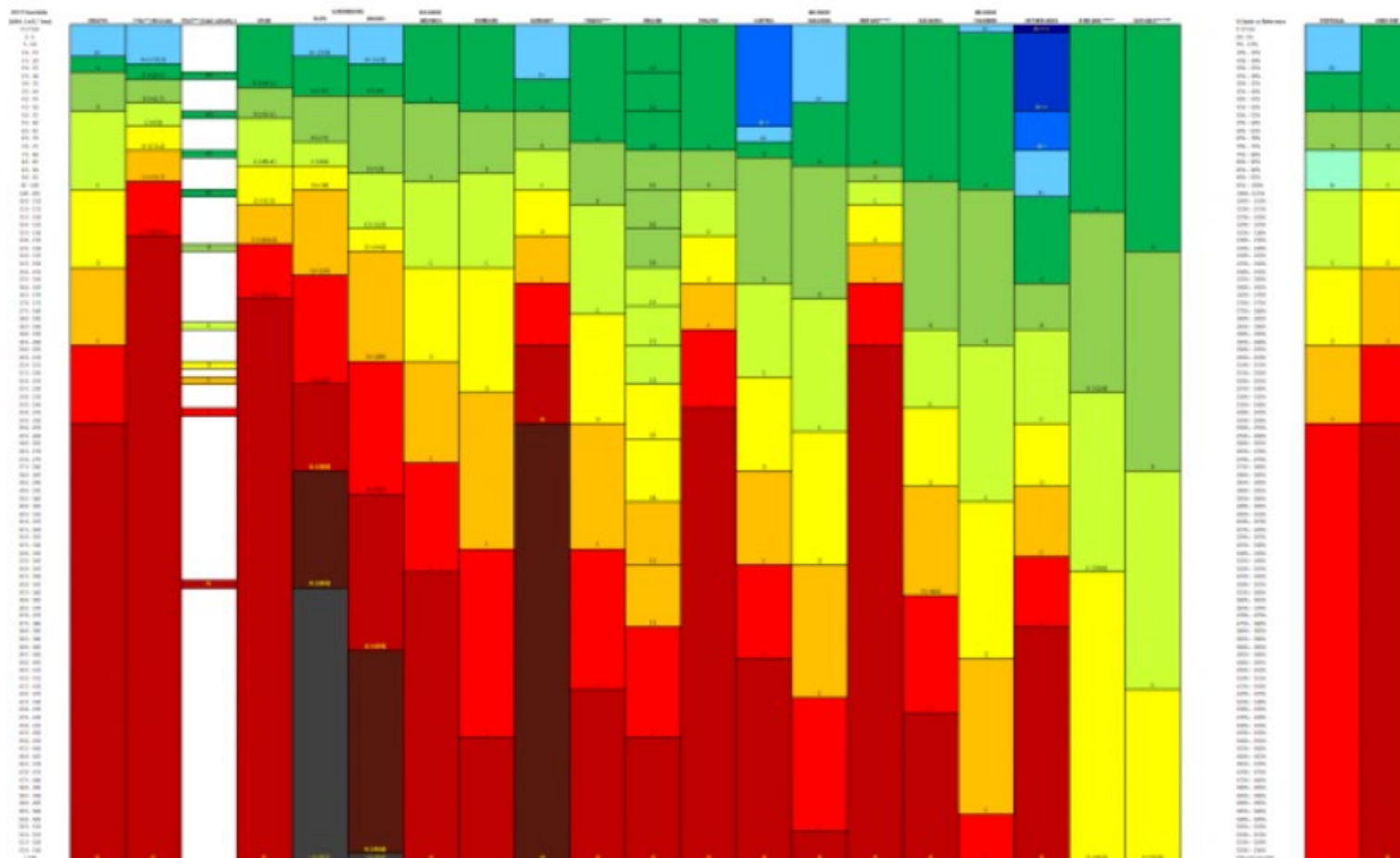
Short articles on current topics: <https://eurodw.eu/knowledge/magazine//>



BLOG

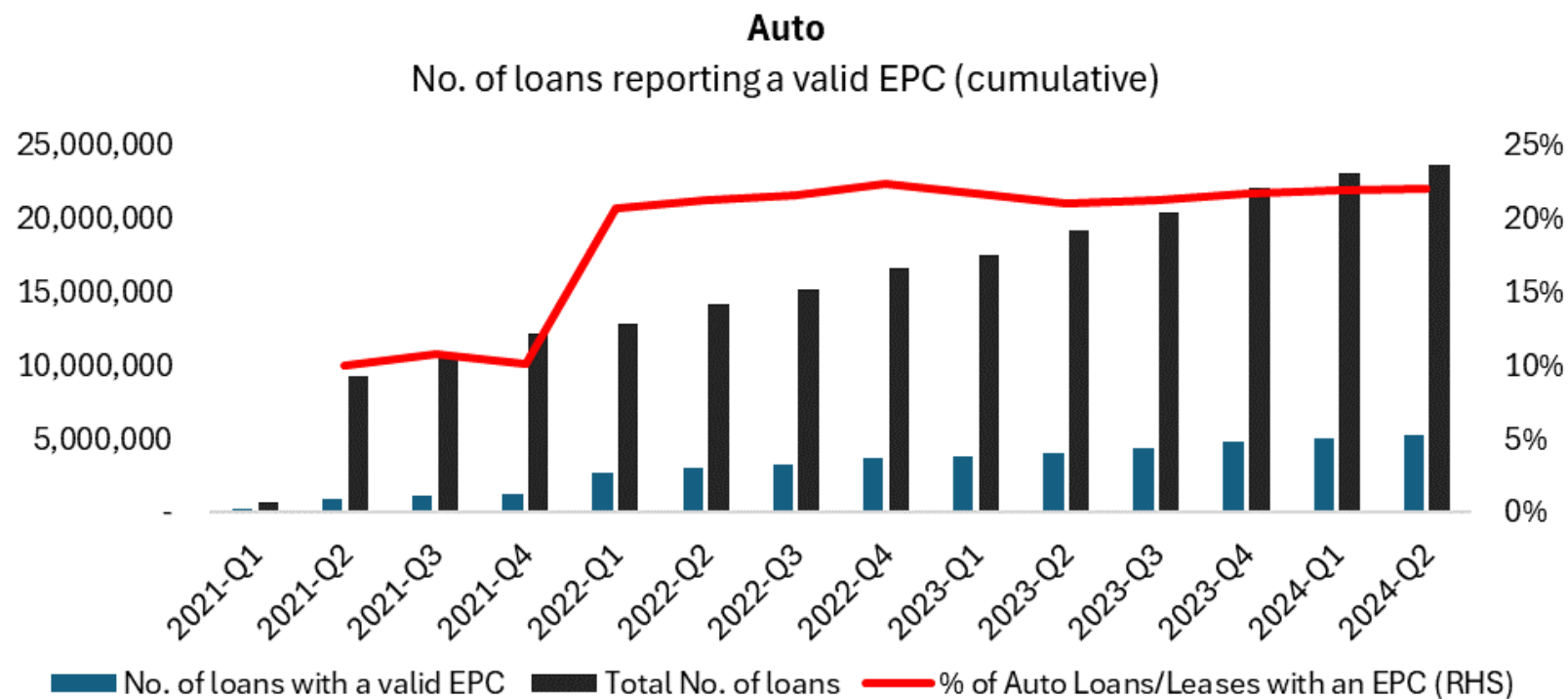
Revisiting “The Babel Tower of EPC Ratings”

<https://eurodw.eu/revisiting-the-babel-tower-of-epc-ratings-updated-thresholds-across-europe/>

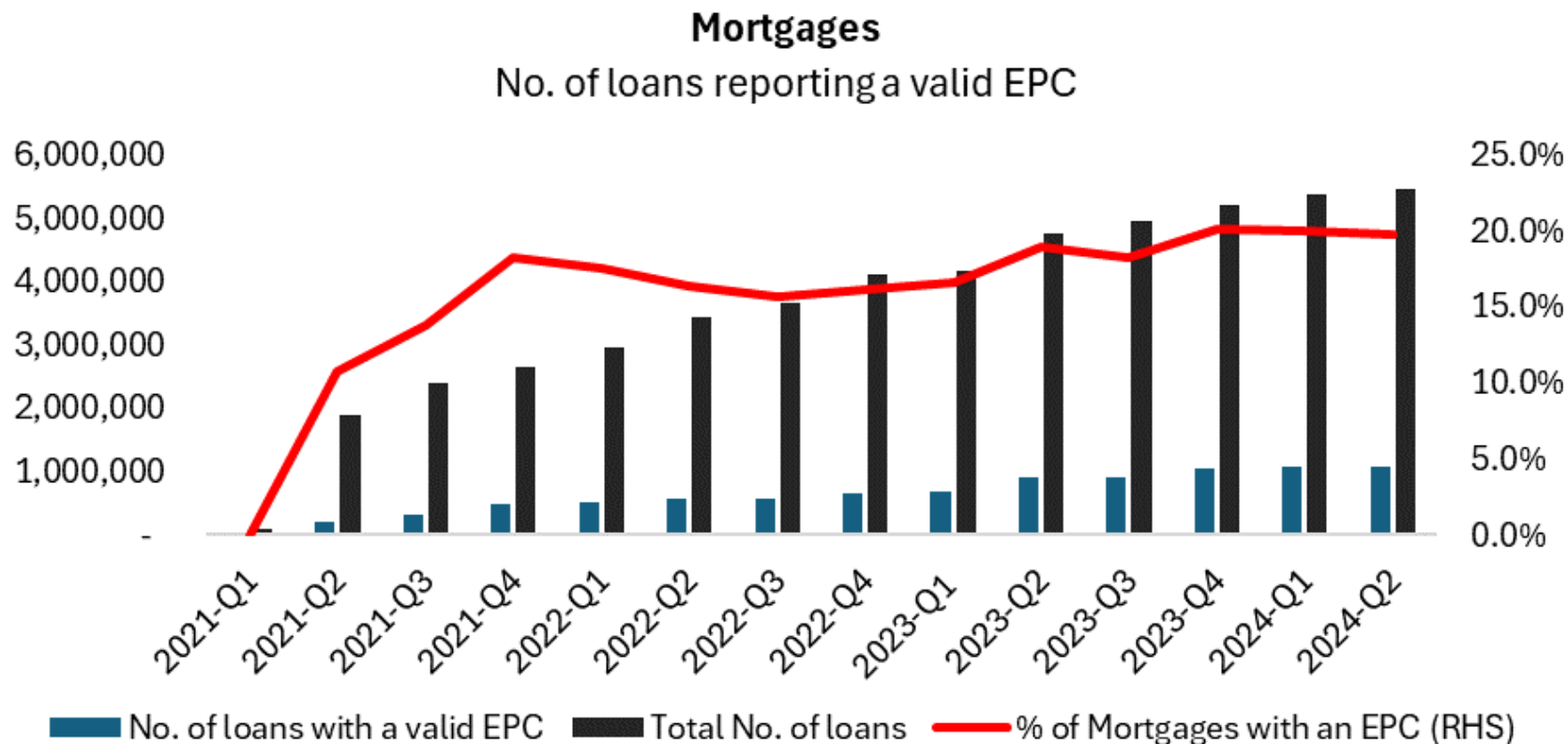


EPC DATA AVAILABILITY

ENERGY PERFORMANCE CERTIFICATES (AUTO)



ENERGY PERFORMANCE CERTIFICATES (RMB)

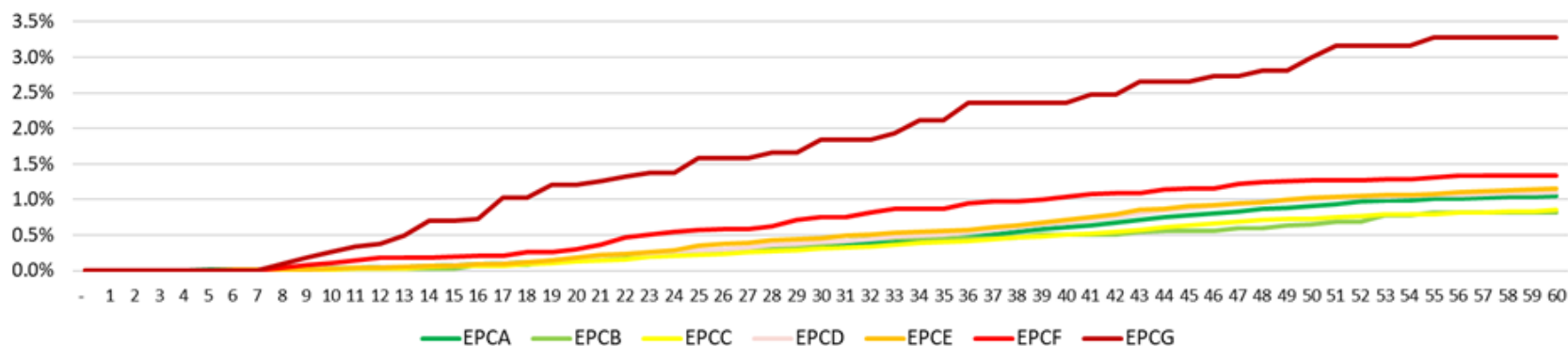


HAS ENERGY EFFICIENCY BECOME CREDIT RELEVANT?

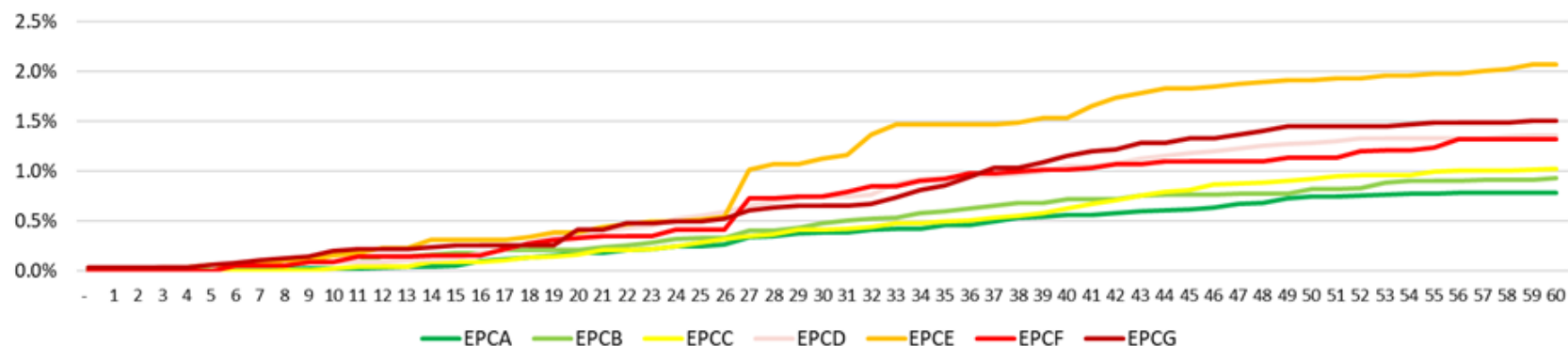
EPC VS LOAN PERFORMANCE

We observe some correlation between mortgage performance and energy performance

Cumulative Delinquencies by EPC (France - Mortgages)
As % of Original Balance, Months after Origination



Cumulative Delinquencies by EPC (Netherlands - Mortgages)
As % of Original Balance, Months after Origination



RESEARCH ON THIS TOPIC

In particular


- Billio et al.: [Energy Efficiency and the Probability of Mortgage Default: The Dutch Case](#)
 - Use EDW data
 - Find some correlation between EPC and loan performance
 - EPC brings useful extra info., is relevant
- Guin et al.: [Risk differentials between green and brown assets?](#)
 - Using a UK granular sample
 - Find that EPC are related to loan performance
 - EPC is also a relevant predictor of performance
- DBRS: [Residential EPCs versus Credit Relevance](#)
 - Also find some correlation between EPC and loan performance
 - Can be explained by other variables

EPC INCLUDED IN MORTGAGE PRICING (WOONNU)

Discount based on your energy label


View our current interest rates and the sustainability discount below by clicking on one of the houses below. Select the house that indicates the energy label of your house. And if desired, choose interest-only as a mortgage type and NHG at the top right of the table.

Your energy label:




A
++++

-0.15%




a

-0.10%




b

-0.05%




c

0%



DtoG

+0.15%



I do not
know

Interest-only

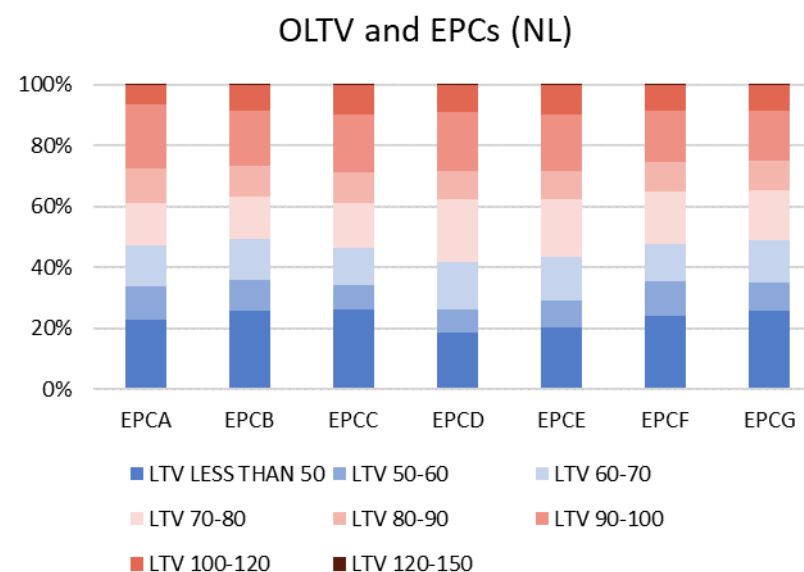
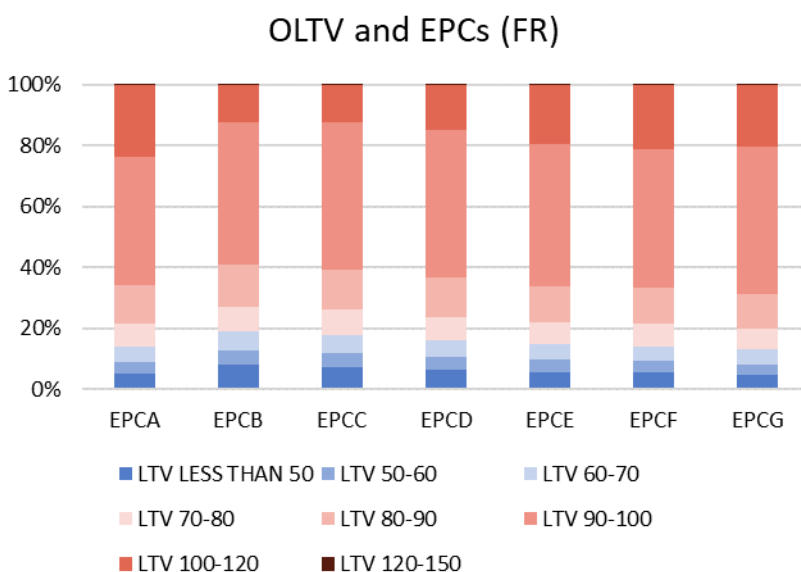
Fixed interest period	NHG	up to 60% *	up to 80% *	up to 90% *	up to 100% *	Higher than 100% *
1 year	4.09%	4.21%	4.28%	4.41%	4.55%	4.68%
5 years	3.56%	3.83%	3.93%	4.03%	4.08%	4.23%
10 years	3.68%	4.16%	4.26%	4.36%	4.41%	4.60%
15 years	4.25%	4.17%	4.27%	4.34%	4.47%	4.68%
20 years	4.31%	4.21%	4.30%	4.41%	4.50%	4.74%
30 years	4.40%	4.42%	4.47%	4.57%	4.69%	5.02%

Source: <https://woonnu.nl/actuele-rentestanden/>

ORIGINAL LOAN-TO-VALUE VS EPC

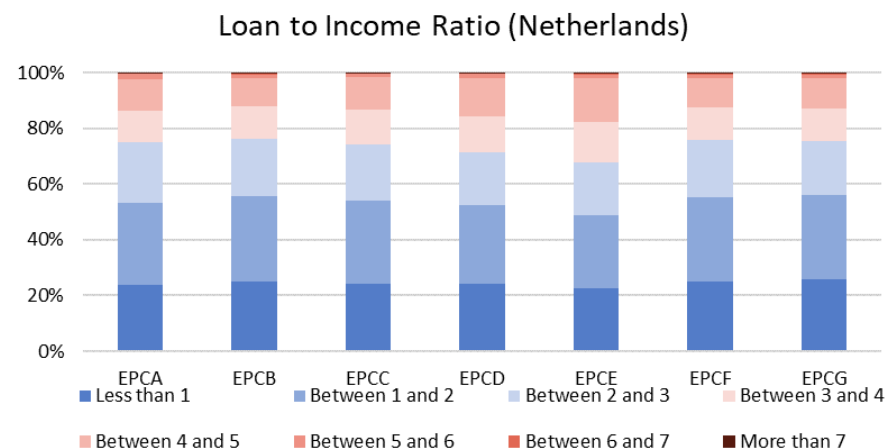
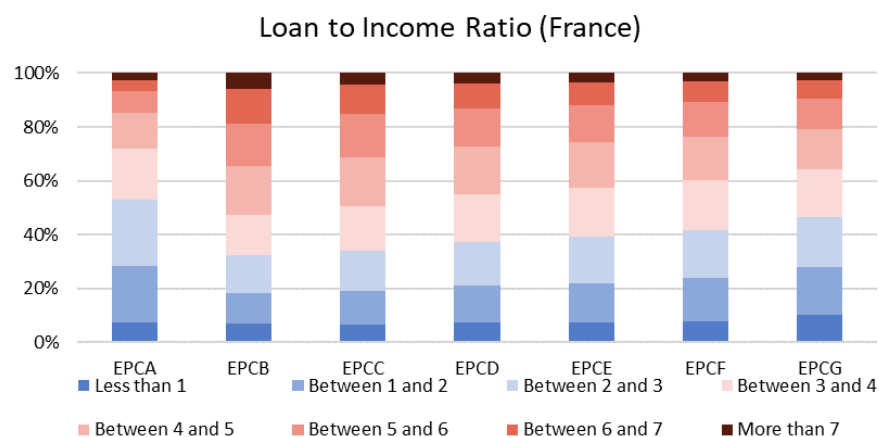
In particular

- OLV is a known predictor of performance:
 - EPC-A has the highest % of 100% OLV in FR
 - E, F, G in FR have indeed the highest OLV and worst performance
 - EPC B, C, D have less high LTVs and perform better than mortgages with EPC E, F, G
 - It only explains up to a point; EPC-A has worse performance than EPC-E, F, G, although it has a higher OLV
 - No clear rank ordering in the NL case



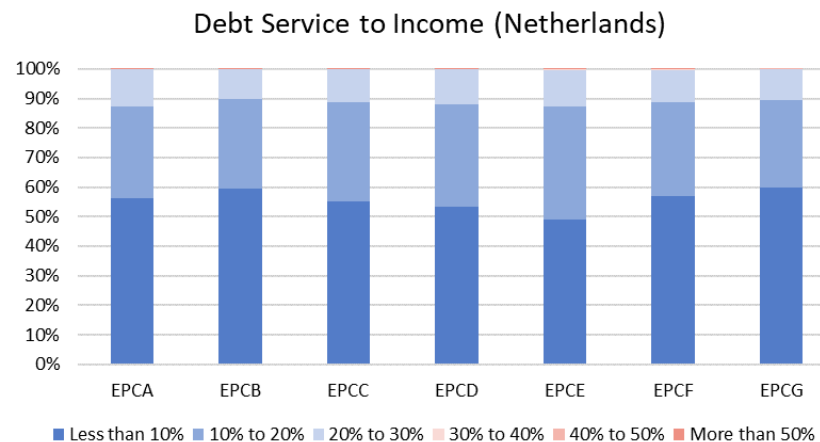
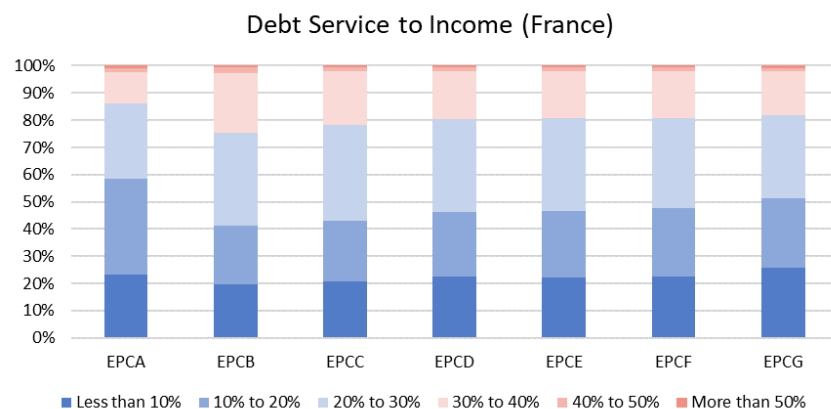
LOAN TO INCOME VS EPC

- Loan to Income Multiple is another key predictor of performance:
 - It does not look like the worse Loan-to-Income multiples are more frequent for the worst EPC
 - No pattern in the NL case
 - Rather the opposite in the case of France



DEBT SERVICING RATIO VS EPC

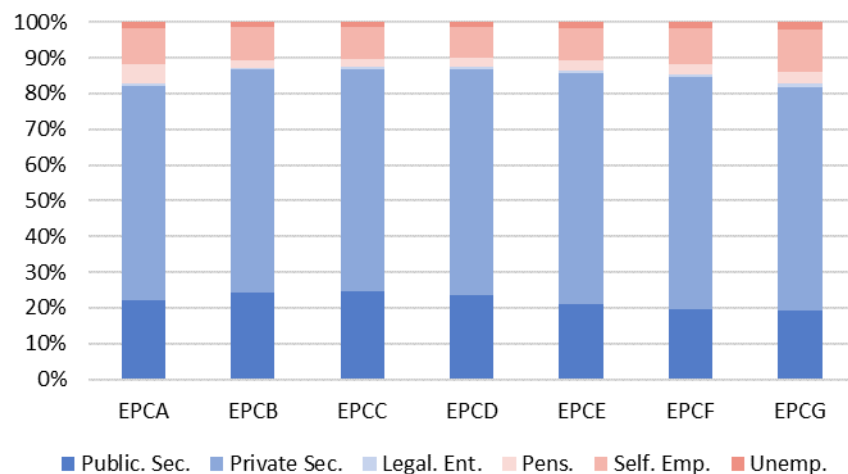
- Instalment-to-income multiple is another key predictor of performance:
 - No strong correlation between lower Loan-to-Income (LTI) multiples and poorer EPC Ratings
 - No specific pattern in the NL case
 - Rather the opposite in the case of France
 - LTI for EPC-G was no riskier than EPC-B mortgages in France



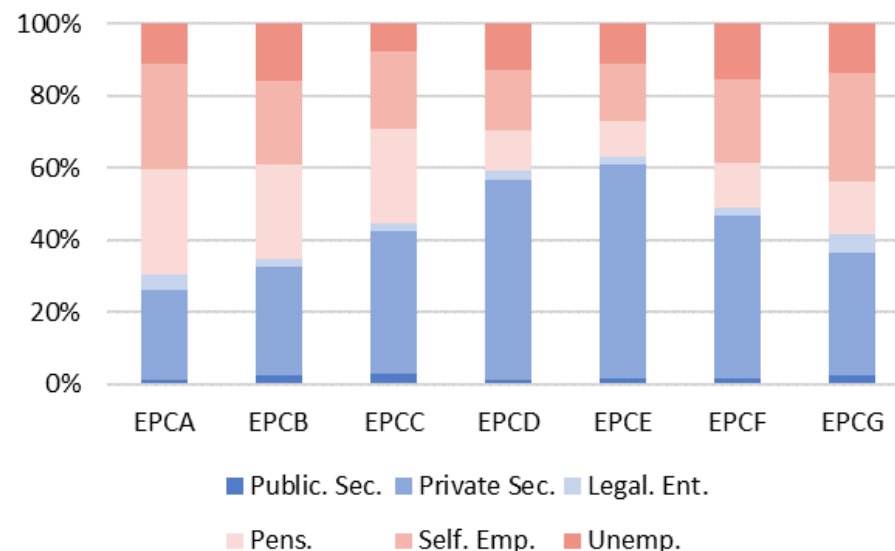
EMPLOYMENT TYPE

- Employment type may play a role
 - Employee private sectors (EMRS): more of them in EPCs E and F in NL
 - More pensioners (PNNR) in EPC-A, B, C in NL
 - No specific pattern in the FR case, higher proportion of public sector employees in France

Employment Type vs EPC (France)



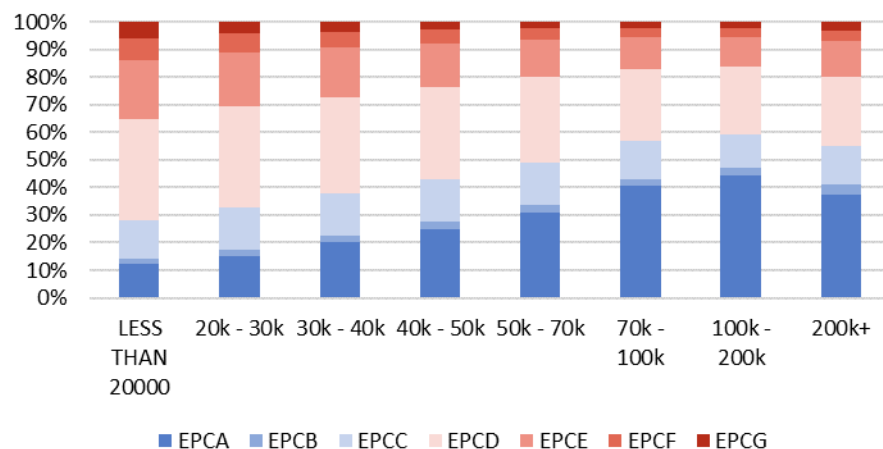
Employment Type vs EPC (Netherlands)



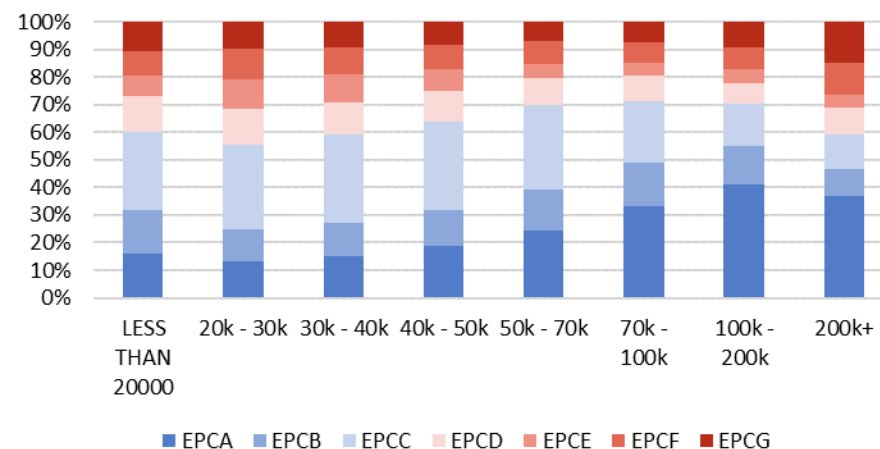
INCOME EFFECT (1)

- People with high incomes are more likely to buy efficient properties
 - Clear in the Netherlands as in France

Wealthier Housholds Tend to Buy Efficient Properties (FR)



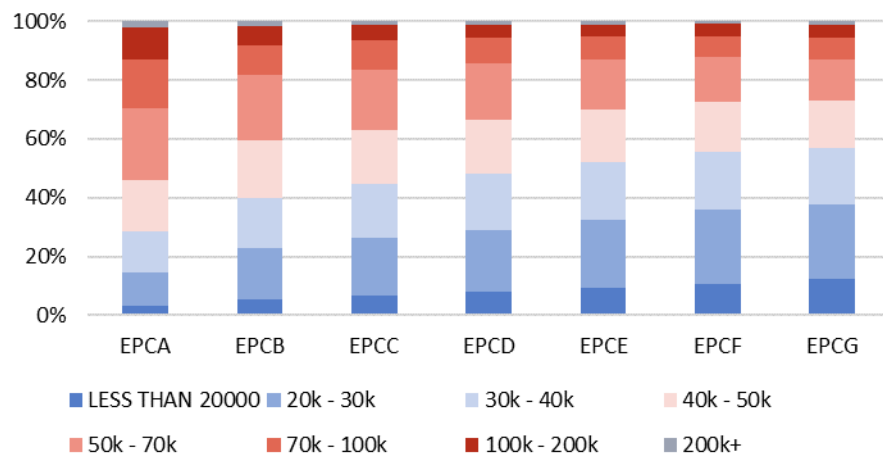
Wealthier Housholds Tend to Buy Efficient Properties (NL)



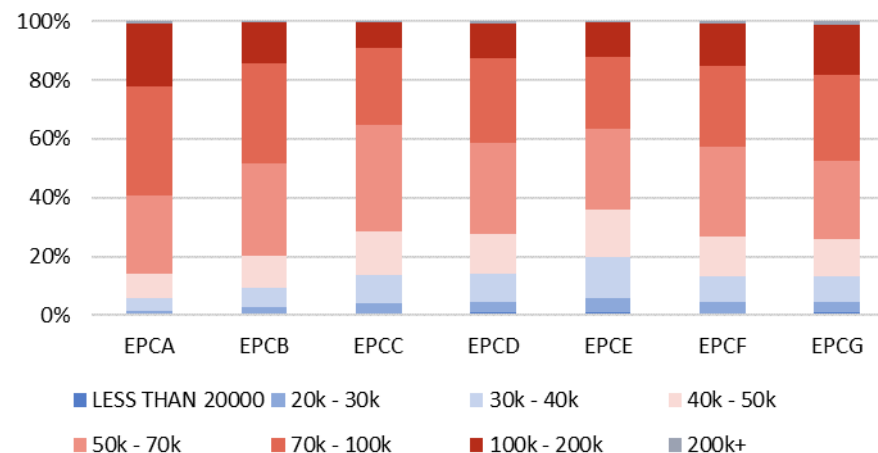
INCOME EFFECT (2)

- And indeed,
 - More than 50% of EPC-A properties are bought by buyers with income > EUR50,000 in France vs 25% of EPCG
 - Incomes less than 40k account for 29% of EPCA in France and 57% of EPCG
 - Relationship is less clear in NL

Wealthier Housholds Tend to Buy Efficient Properties (FR)



Wealthier Housholds Tend to Buy Efficient Properties (NL)



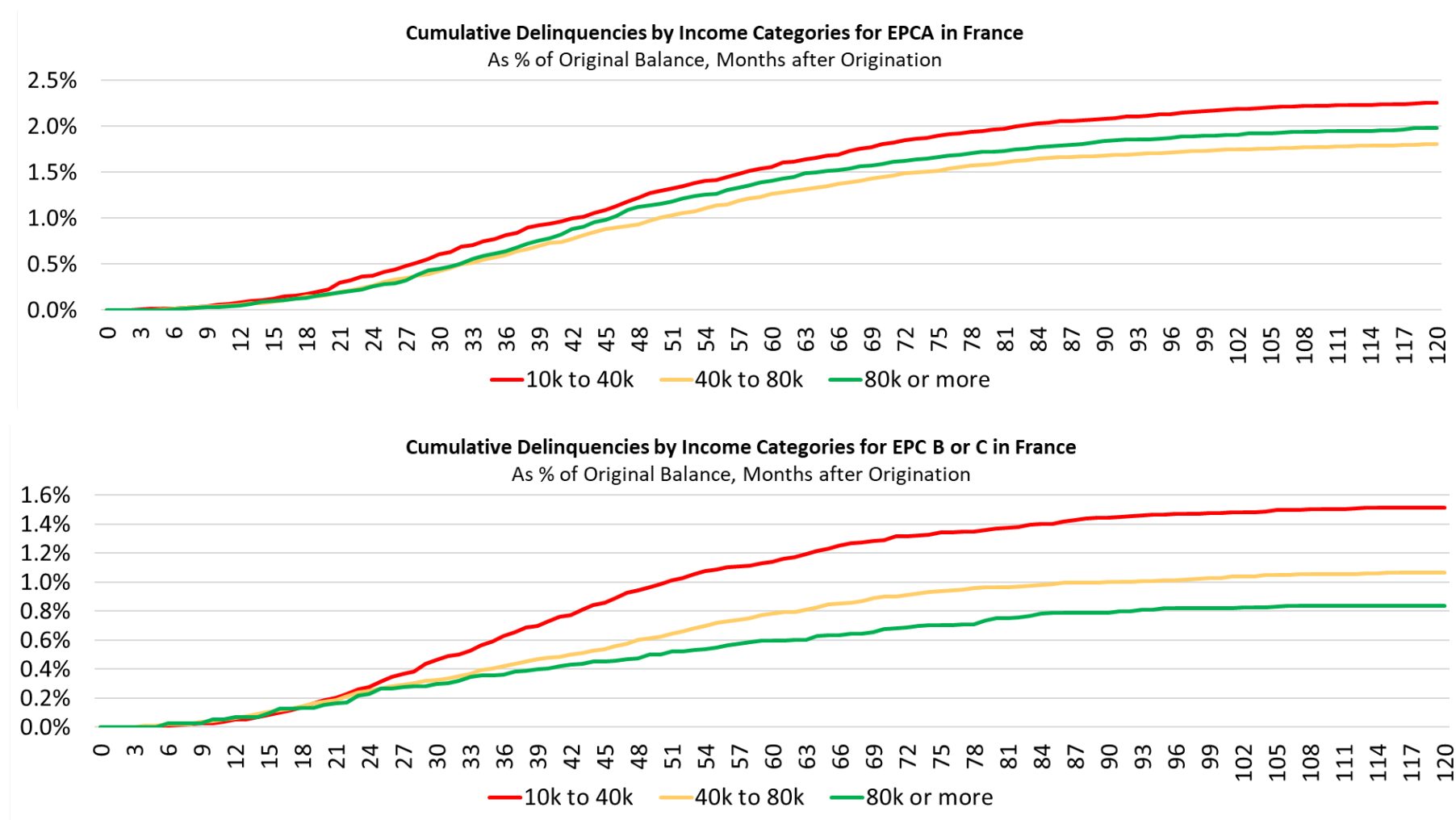
CUMULATIVE DELINQUENCIES BY INCOME FOR A GIVEN EPC

Does income explain performance?

- We set an EPC category and look at delinquencies for various income levels...
- For a given EPC, we look at cumulative delinquencies by income category
- Income seems to matter a lot in France, less in the Netherlands
- In France:
 - In all cases, lower income categories have higher delinquencies at all EPC levels
 - When the EPC is A, the difference is small.
 - When the EPC is D, E, F, G, cumulative delinquencies are twice as high for the lower income category compared with the higher income category.
 - The lower income categories are more likely to experience delinquency, and the difference is greater for lower EPCs.
- In the Netherlands:
 - Income seems to matter a lot less as cumulative delinquencies are very close across Income ranges.

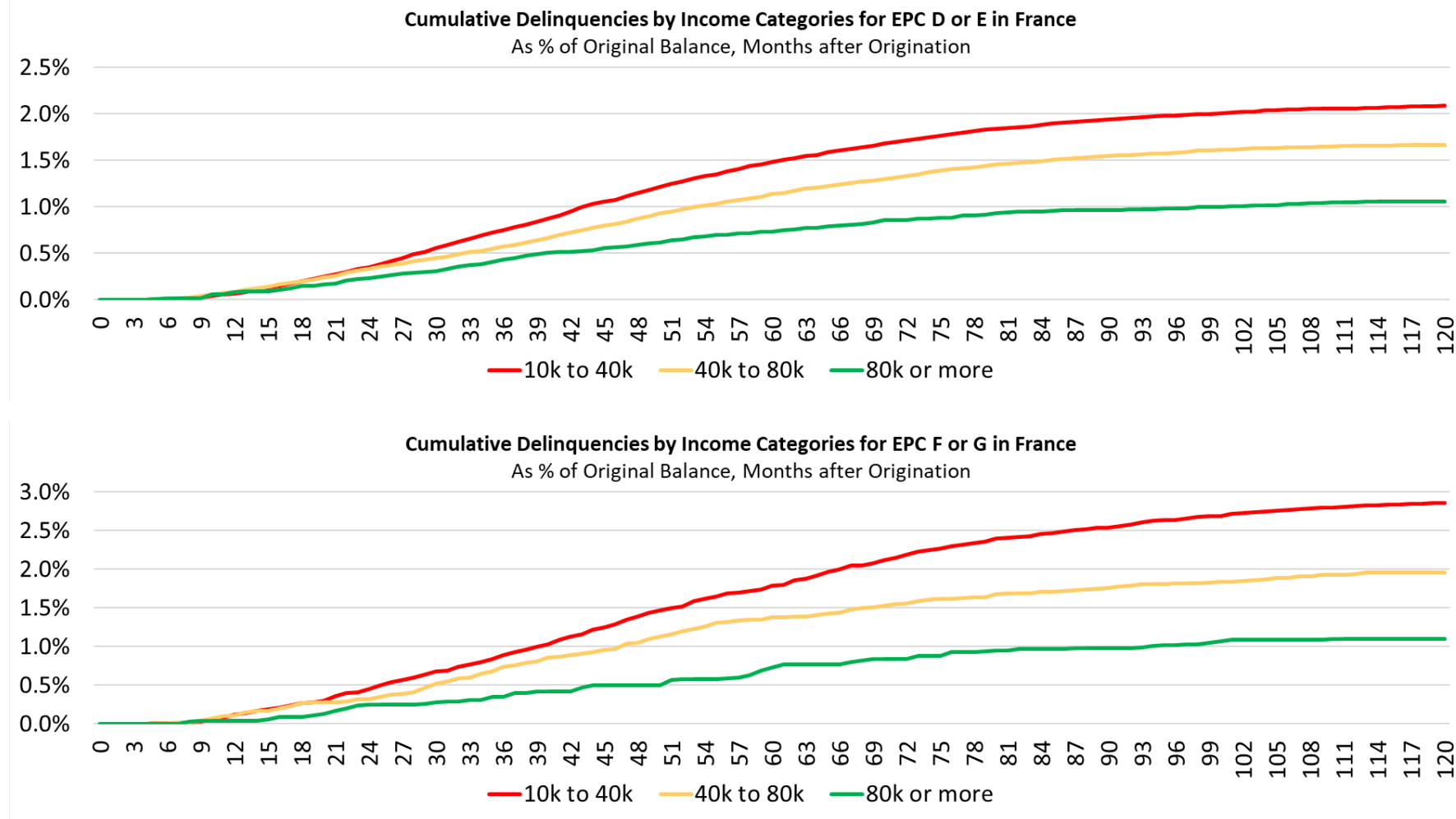
INCOME VS LOAN PERFORMANCE, TAKING EPC INTO ACCOUNT...

We observe some correlation between mortgage performance and energy performance



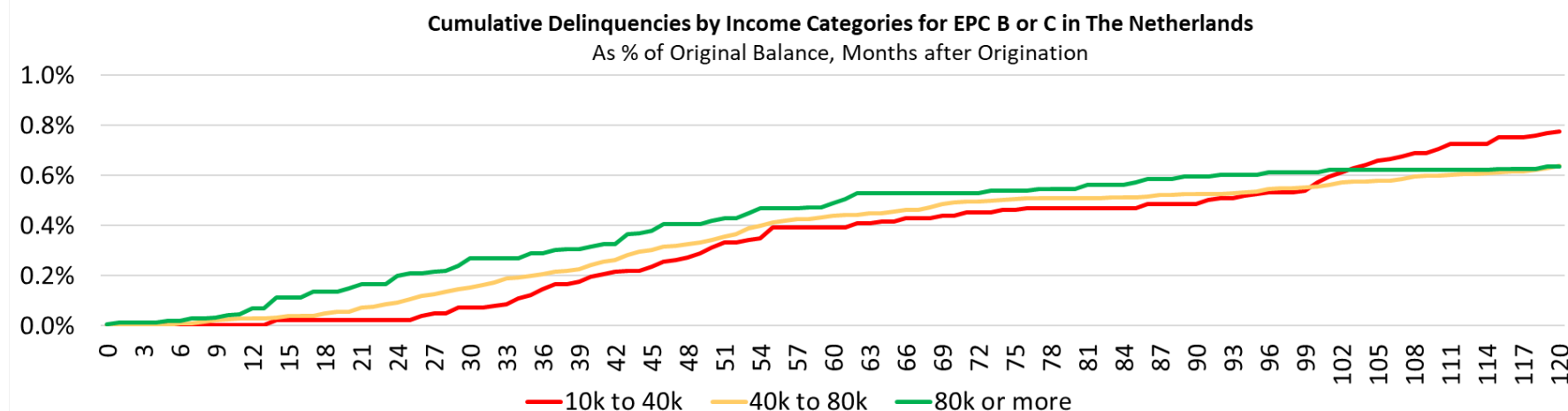
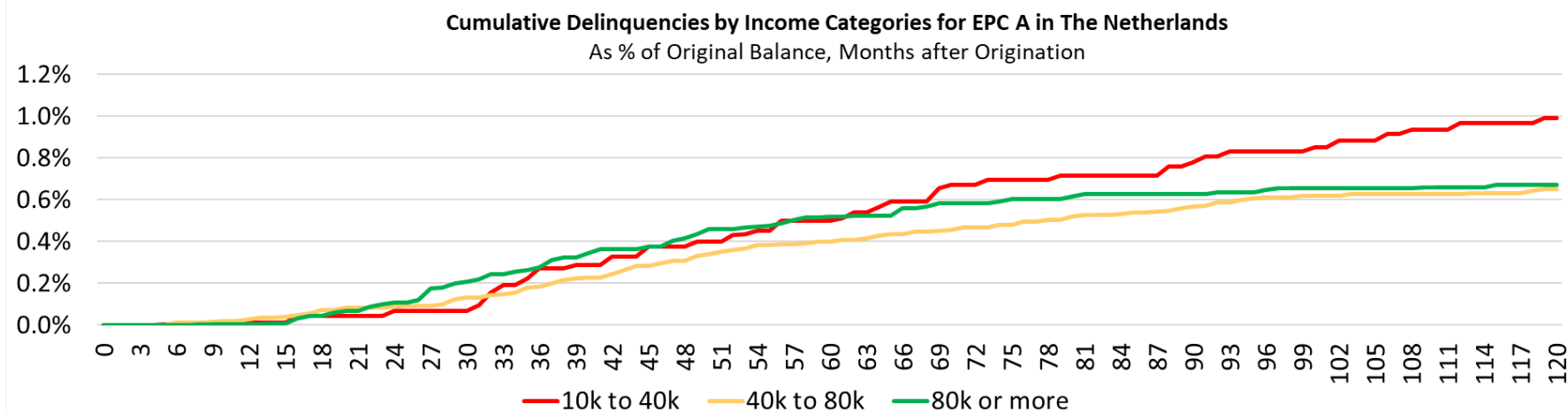
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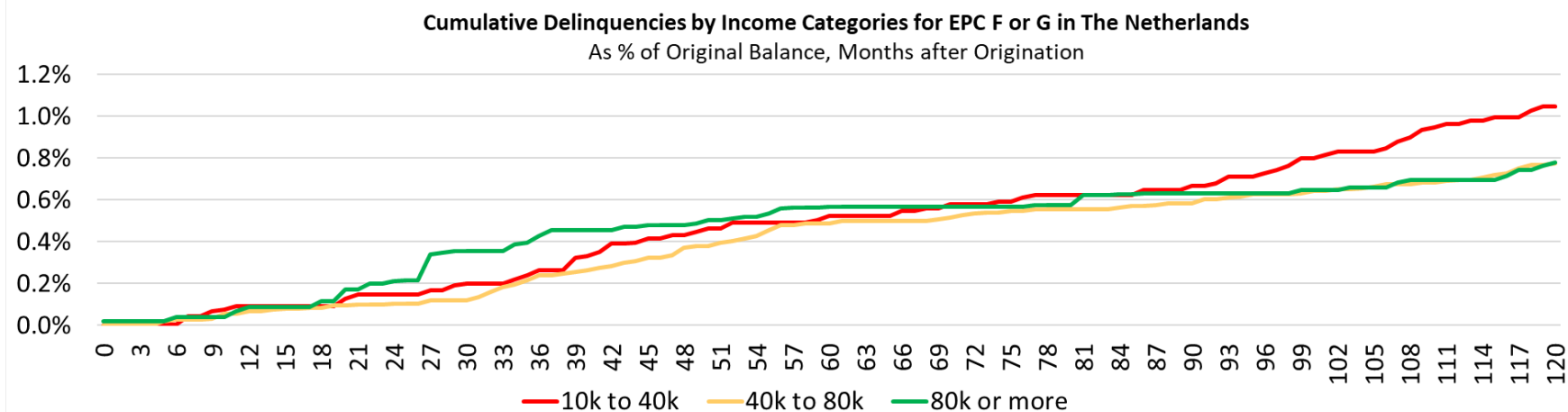
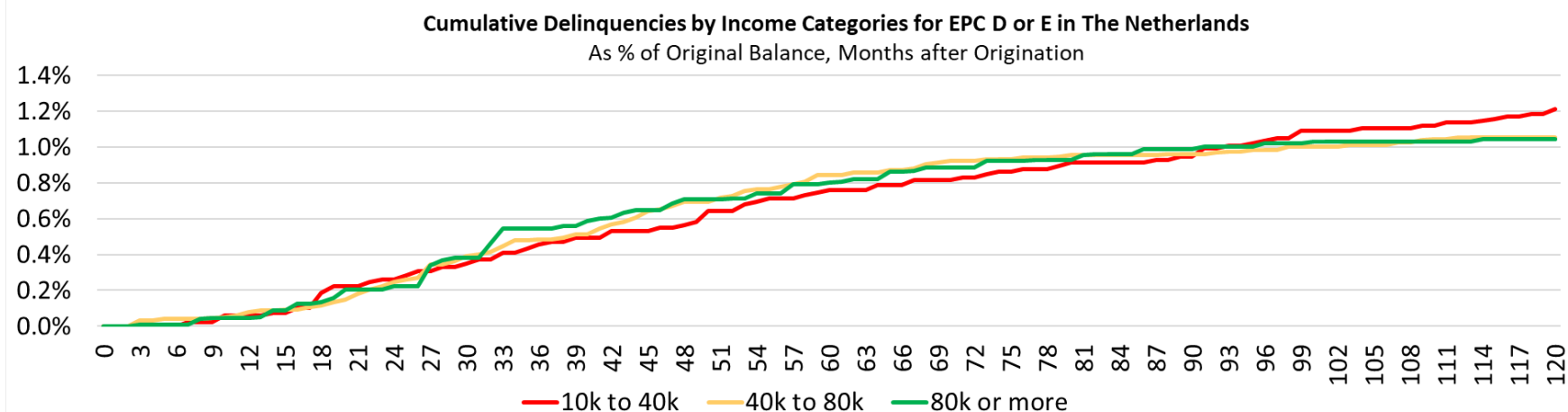
INCOME VS LOAN PERFORMANCE, TAKING EPC INTO ACCOUNT...

We observe some correlation between mortgage performance and energy performance



INCOME VS LOAN PERFORMANCE, TAKING EPC INTO ACCOUNT...

We observe some correlation between mortgage performance and energy performance



CUMULATIVE DELINQUENCIES BY EPC FOR A GIVEN INCOME

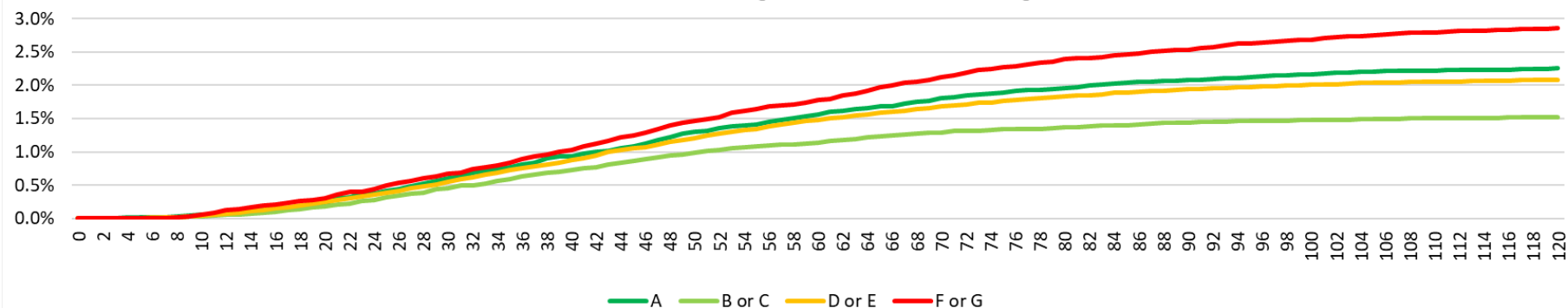
Does EPC explain performance?

- We set an income category and look at delinquencies per EPC for various income levels...
- In France:
 - For Incomes less than 80,000 per year:
 - F and G categories perform worse, D and E perform better and B and C perform best; but A performs worse than D or E...
 - In the highest income category, performance is worst for EPC-A, undifferentiated for the other categories.
- In the Netherlands:
 - Income seems to matter a lot less as cumulative delinquencies are very close across income ranges.

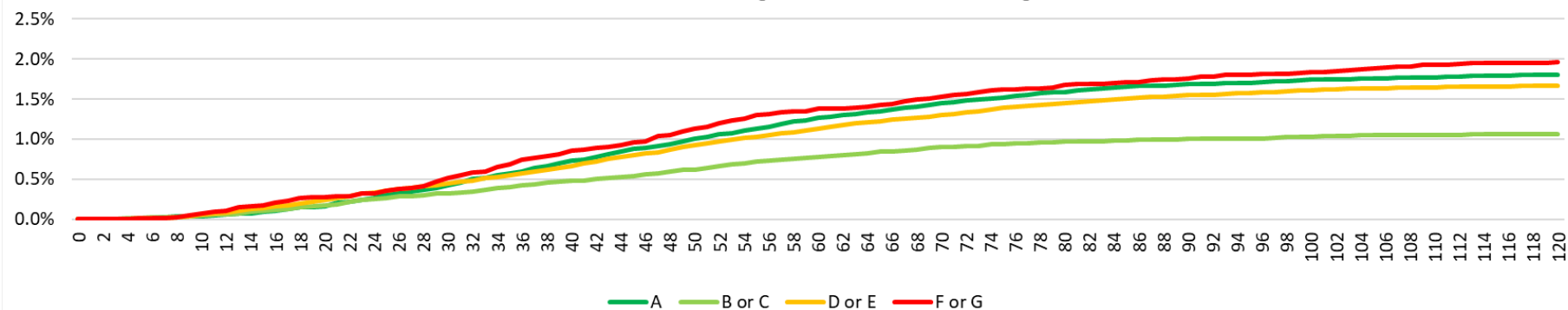
INCOME VS LOAN PERFORMANCE, TAKING EPC INTO ACCOUNT...

We observe some correlation between mortgage performance and Energy Performance

Cumulative Delinquencies by EPC for Incomes €10,000 to €40,000 per year in France
As % of Original Balance, Months after Origination

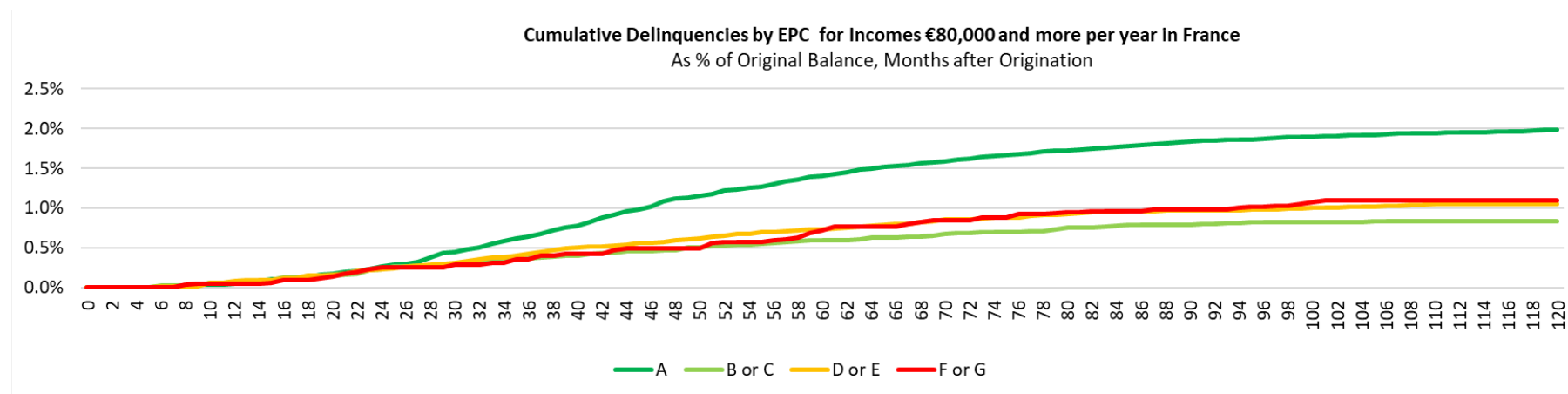


Cumulative Delinquencies by EPC for Incomes €40,000 to €80,000 per year in France
As % of Original Balance, Months after Origination



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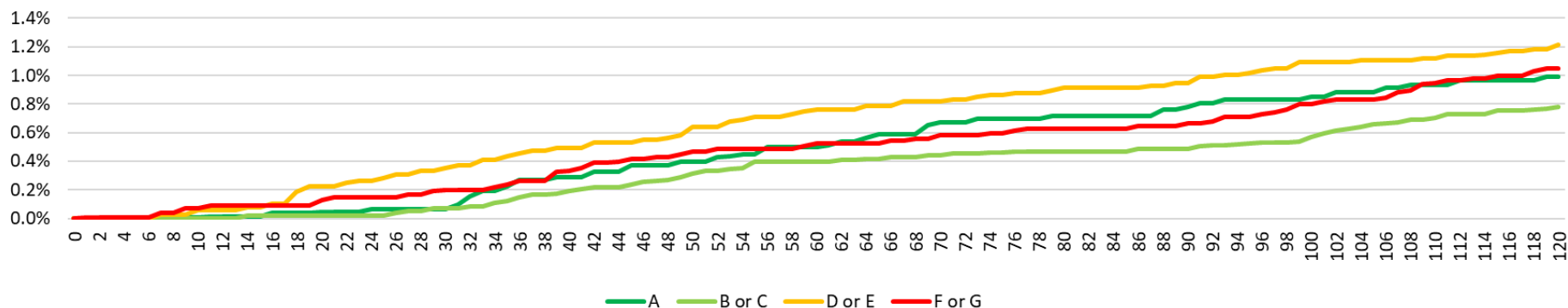
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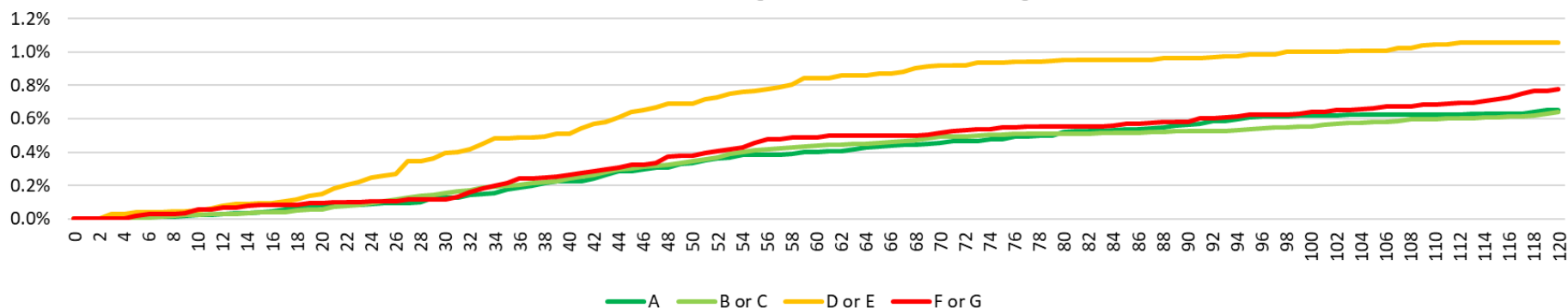
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Cumulative Delinquencies by EPC for Incomes €10,000 to €40,000 per year in the Netherlands
As % of Original Balance, Months after Origination

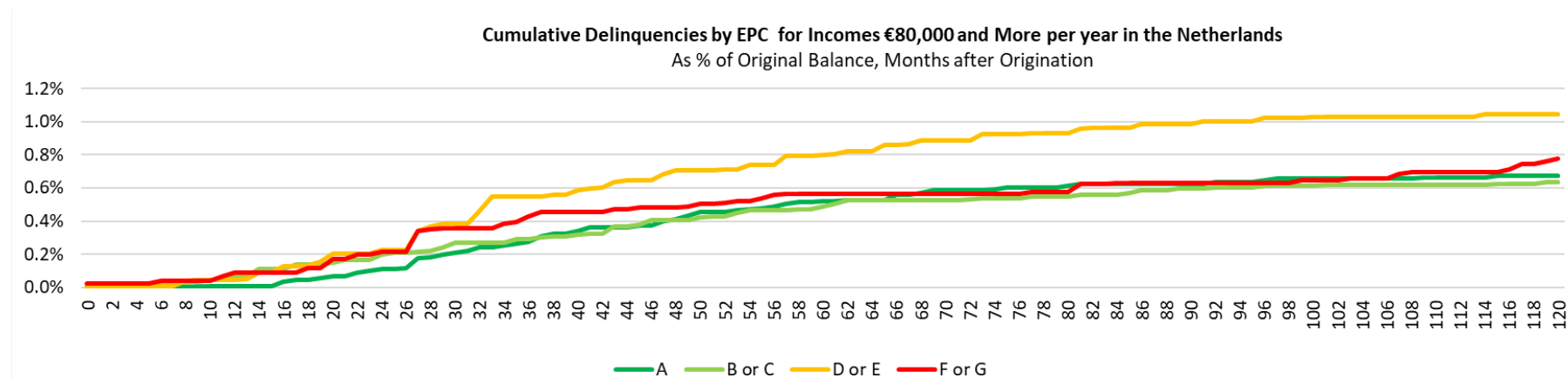


Cumulative Delinquencies by EPC for Incomes €40,000 to €80,000 per year in the Netherlands
As % of Original Balance, Months after Origination



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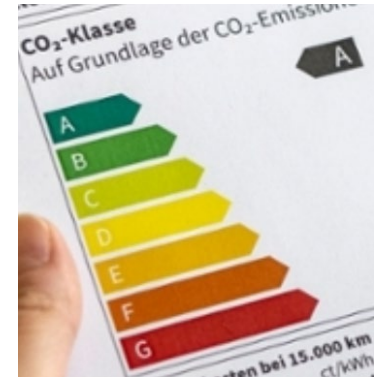


NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

Mandatory since 1st May 2024

2 Major changes:



AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

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2 Major changes:

1. Car weight ✗

2. NEDC ✗

Absolute Thresholds on CO₂ emissions! ✓

WLTP cycle ✓



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4. Die §§ 3a und 4 werden wie folgt gefasst:

„§ 3a

Zuweisung zu einer CO₂-Klasse

(1) Der Hersteller muss neue Personenkraftwagen entsprechend der Höhe der kombinierten CO₂-Emissionen einer der nachfolgend bestimmten CO₂-Klassen zuweisen:

CO ₂ -Klasse	Wert der kombinierten CO ₂ -Emissionen (in Gramm CO ₂ je Kilometer)
A	0
B	1 bis 95
C	96 bis 115
D	116 bis 135
E	136 bis 155
F	156 bis 175
G	176 und mehr

Für extern aufladbare Hybridelektrofahrzeuge ist die CO₂-Klasse jeweils auf der Grundlage des Werts der gewichtet kombinierten CO₂-Emissionen und auf der Grundlage des Werts der kombinierten CO₂-Emissionen anzugeben; letztere Angabe ist zu benennen als „bei entladener Batterie“.

(2) Maßgeblich für die Zuweisung eines individuellen Personenkraftwagens zu einer CO₂-Klasse ist der Wert der CO₂-Emissionen, der sich aus der Übereinstimmungsbescheinigung dieses Personenkraftwagens ergibt.

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Thresholds in France!

Les sept niveaux d'émission de CO₂

De A à G, du vert au rouge, les niveaux d'émission de carbone d'un véhicule pour pour 100 kilomètres parcourus, sont définis de cette façon :

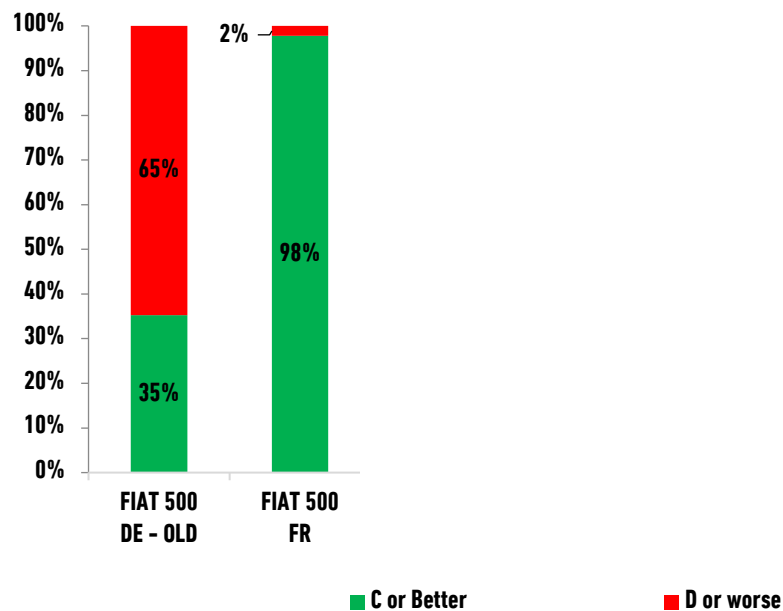
- **niveau A** : pour les véhicules dont les émissions de CO₂ sont inférieures ou égales à 100 g/km
- **niveau B** : pour les véhicules dont les émissions de CO₂ varient de 101 à 120 g/km
- **niveau C** : pour les véhicules dont les émissions de CO₂ varient de 121 à 140 g/km
- **niveau D** : pour les véhicules dont les émissions de CO₂ varient de 141 à 160 g/km
- **niveau E** : pour les véhicules dont les émissions de CO₂ varient de 161 à 200 g/km
- **niveau F** : pour les véhicules dont les émissions de CO₂ varient de 201 à 250 g/km
- **niveau G** : pour les véhicules dont les émissions de CO₂ sont supérieures à égales à 250 g/km

AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

Its impact on EPCs assigned to common cars v



FIAT 500



AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

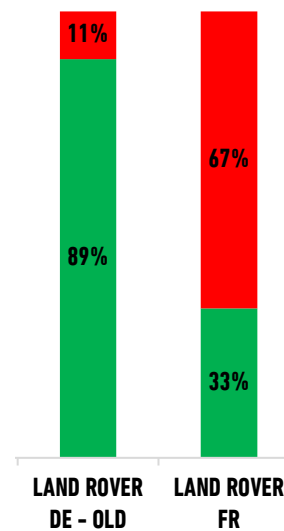
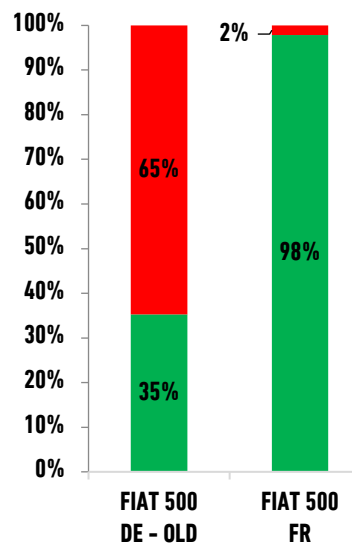
Its impact on EPCs assigned to common cars



FIAT 500



LAND ROVER SUV



■ C or Better

■ D or worse

AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

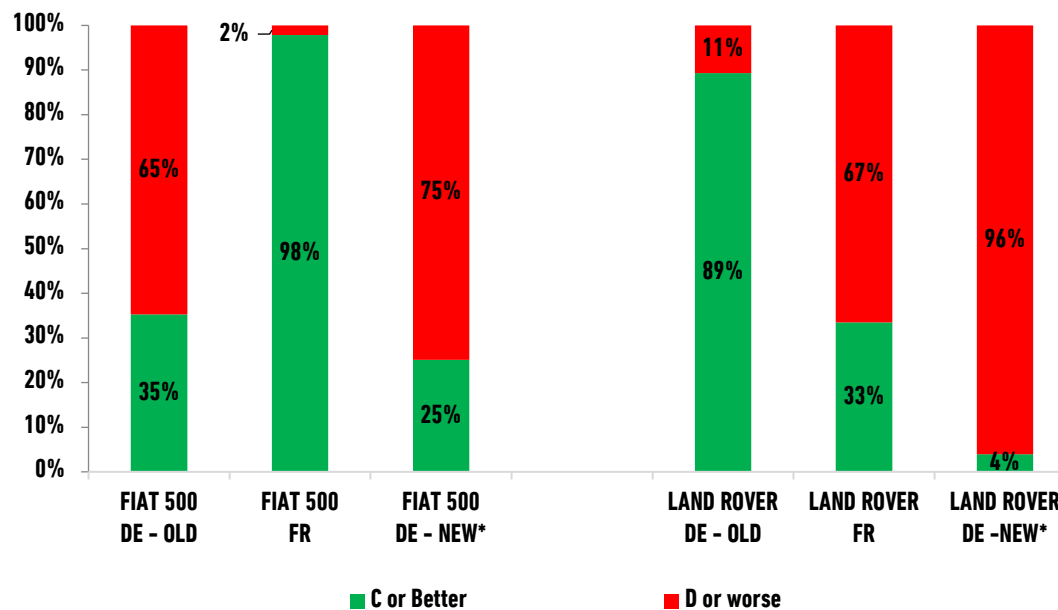
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FIAT 500



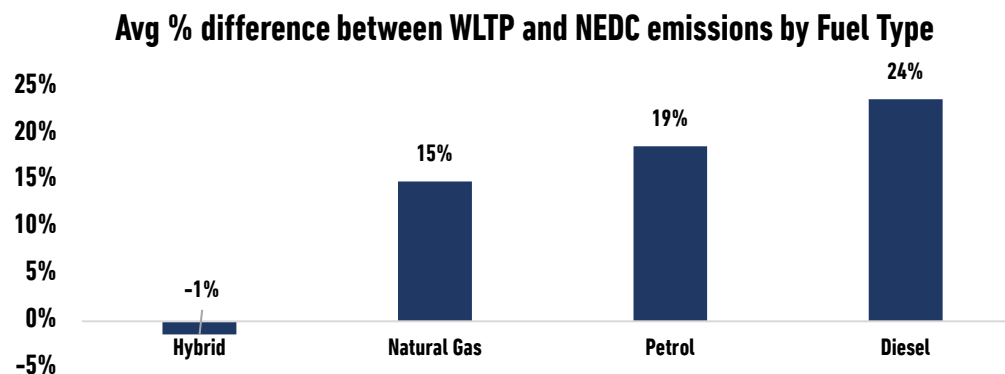
LAND ROVER SUV



AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

WLTP emissions values are on average 20% more than NEDC emissions for the same car!

- WLTP emissions value compared to NEDC increases the most for Diesel cars
- WLTP and NEDC standard emissions values are closest for Hybrid cars

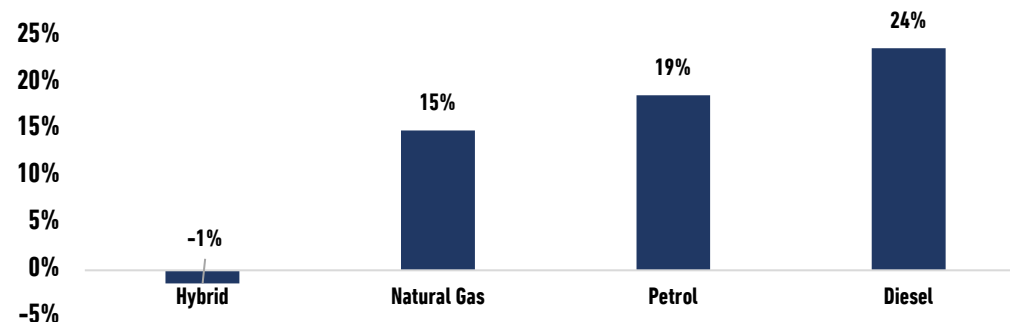


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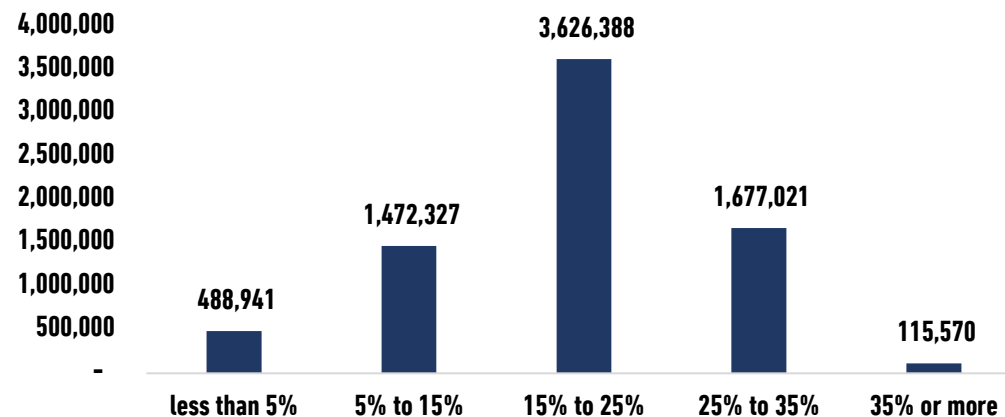
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Avg % difference between WLTP and NEDC emissions by Fuel Type



- The Percentage difference in the 2 sets of emissions for passenger cars can vary greatly

Number of cars grouped by Avg % difference between WLTP and NEDC emissions

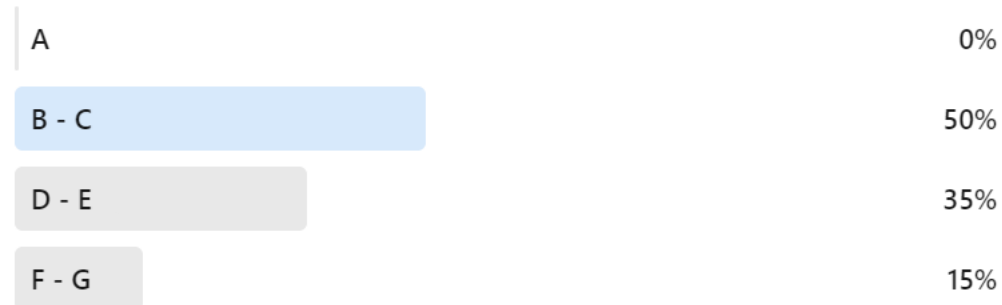


AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

LinkedIn Poll

How does the Mercedes-Benz E 220 d (2016-2020 model, 2L engine) rate under the updated Passenger Car Energy Consumption Labeling Ordinance?

The author can see how you vote. [Learn more](#)



20 votes • Poll closed • [Remove vote](#)



AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

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Our estimates show that if the new methodology was applied to the famously reliable car often used as a taxi in Germany and previously rated **A**, would now be either **D** or **E**

AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

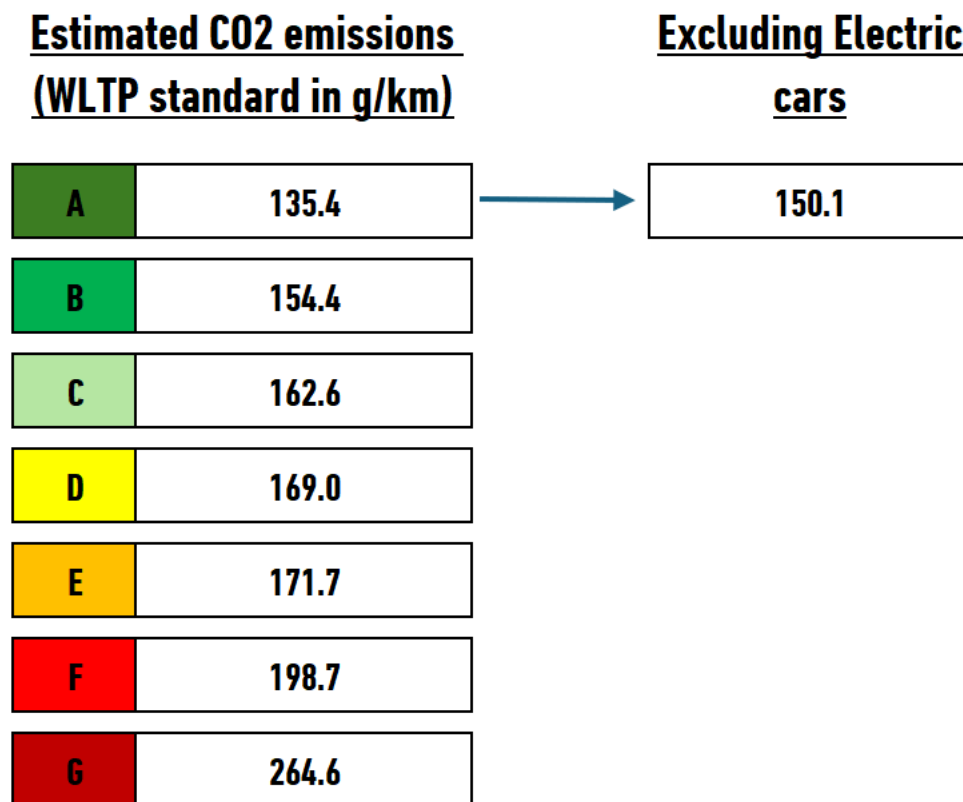
Average estimated CO₂ emissions for 2M+ EPCs available for German cars at EDW

Estimated CO₂ emissions (WLTP standard in g/km)

A	135.4
B	154.4
C	162.6
D	169.0
E	171.7
F	198.7
G	264.6

AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

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Excluding Electric cars

150.1

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AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

If 2M+ German car EPCs available at EDW were converted to EPCs according to the new methodology

	<u>OLD EPC</u>	<u>NEW EPC</u>
A	38.4%	5.0%

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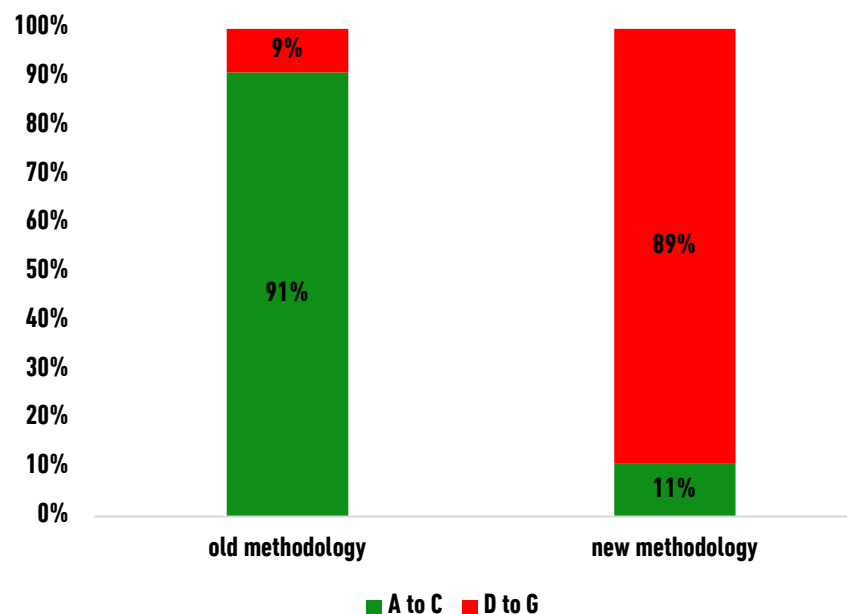
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G	1.1%	20.3%

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Distribution of EPCs of cars in German Auto ABS Portfolios

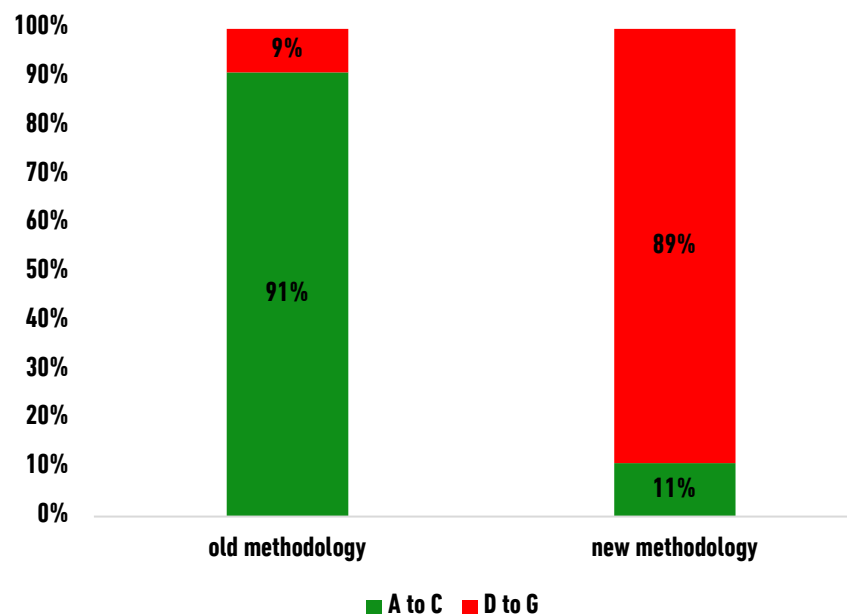


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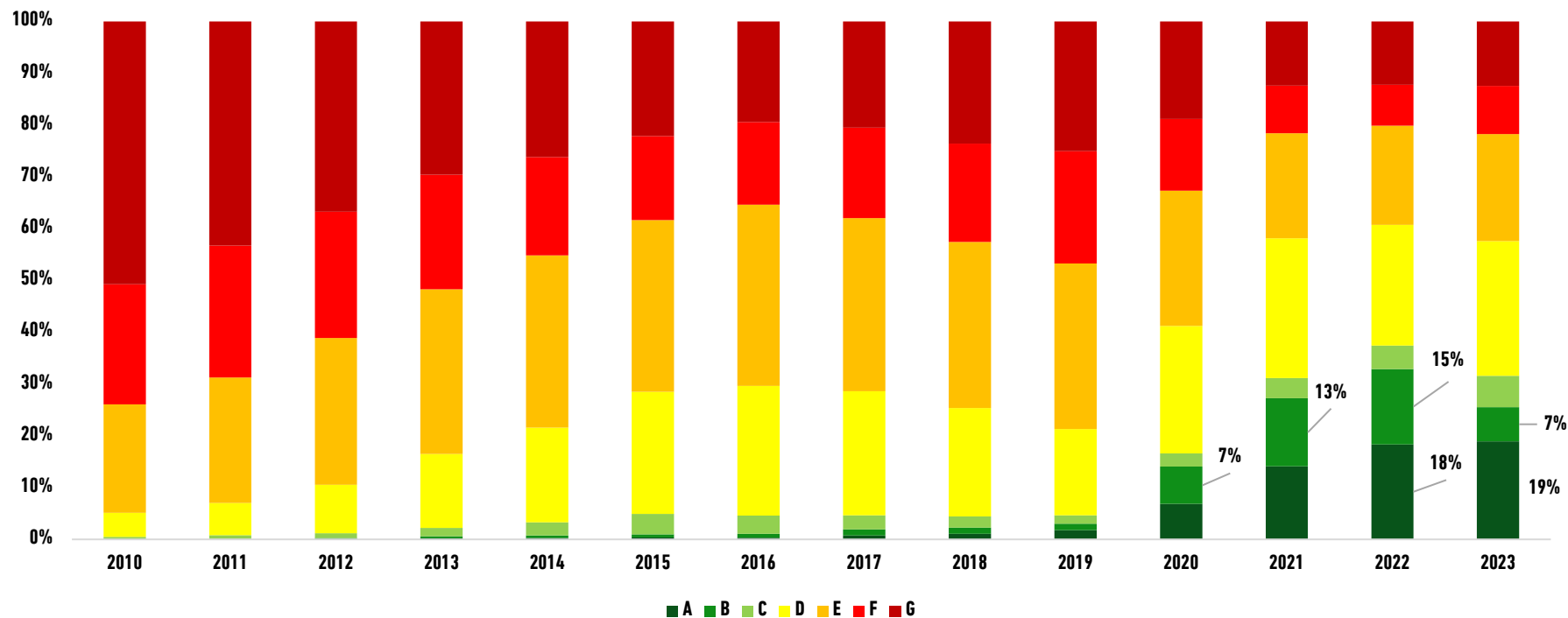
Distribution of EPCs of cars in German Auto ABS Portfolios



- Old methodology – About 90% of cars in German Auto ABS are rated C or better!
- New methodology – About 90% of cars in German Auto ABS would be rated D or worse!

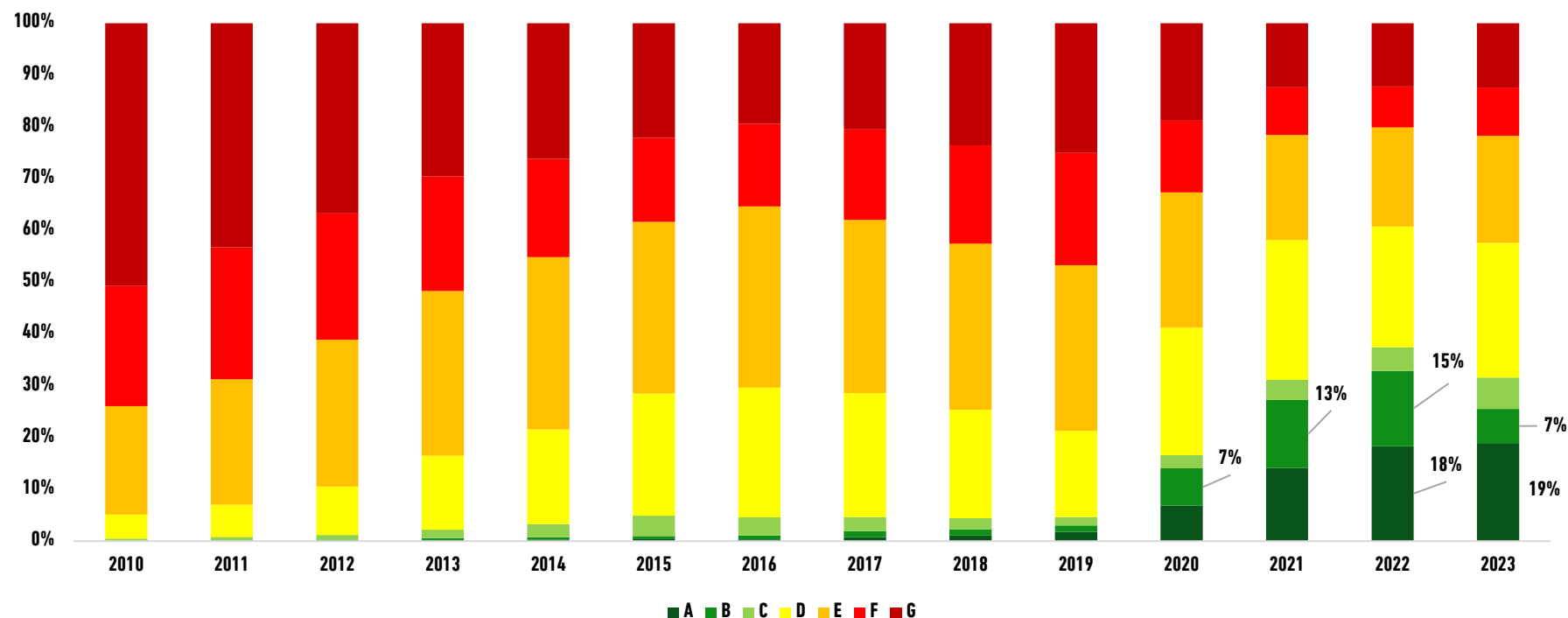
AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

New EPC Label assigned to New cars in Germany by Year of Car Registration



AMBITIOUS NEW CO₂ LABELING ORDINANCE FOR CARS IN GERMANY

New EPC Label assigned to New cars in Germany by Year of Car Registration



- 51% of 2010 cars would be rated G according to the latest standards
- Down from 15% in 2022, just 7% of 2023 cars would be rated B (possible impact of reduced subsidies for Hybrids)

DRIVING THE FUTURE: EUROPEAN GREEN AUTO SECURITISATION WORKSHOP

12th Nov at DBRS - Neue Mainzer Str. 75, 60311 Frankfurt am Main (2pm to 6pm)

After the successful workshop last year, we are organising our second workshop together with Leibniz Institute for Financial Research (SAFE)

Confirmed Speakers from the industry include:

- **European Environment Agency**
- **European Commission**
- **Banque de France**
- **True Sale Initiative**
- **DBRS**
- **Hyundai Capital Bank**
- **MUFG Bank**
- **Baker McKenzie**

SAVE THE DATE: 12th NOV'2024

More details will be shared closer to the event date

PROXY DATA

PROXY DATA TO COMPLY WITH STS REQUIREMENTS

We can help your organisation comply with relevant performance requirements for substantially similar exposures

If you are a new issuer with less than 5 years of historical data, we have:

- loan level data from 1800+ ABS deals
- Spanning 10+ years of time series (2013 till Present)
- across 10+ countries
- all major asset classes

We have provided Historical Performance Data for:

- RMBS, AUTO, SME and CMR asset classes
- UK, NL, IT, FR and DE

Quarters after securitization	Year of Securitization						Quarters after securitization	Year of Securitization					
	2014	2015	2016	2017	2018	2019		2014	2015	2016	2017	2018	2019
1	0.00%	0.00%	0.06%	0.00%	0.02%	0.00%	1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	0.05%	0.00%	0.00%	0.00%	0.02%	0.02%	2	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%
3	0.04%	0.00%	0.11%	0.02%	0.03%	0.02%	3	0.00%	0.00%	0.31%	0.01%	0.00%	0.00%
4	0.20%	0.03%	0.21%	0.06%	0.05%		4	0.00%	0.00%	0.37%	0.01%	0.00%	0.00%
5	0.22%	0.02%	0.26%	0.07%			5	0.00%	0.00%	0.27%	0.02%		
6	0.32%	0.07%	0.32%	0.13%			6	0.00%	0.00%	0.56%	0.03%		
7	0.42%	0.13%	0.74%	0.14%			7	0.05%	0.00%	0.56%	0.05%		
8	0.51%	0.15%	0.99%	0.19%			8	0.07%	0.00%	0.64%	0.05%		
9	0.52%	0.17%	0.91%	0.21%			9	0.14%	0.00%	0.64%	0.05%		
10	0.55%	0.23%	0.95%				10	0.35%	0.00%	0.64%			
11	0.62%	0.26%	1.00%				11	0.35%	0.00%	0.72%			
12	0.66%	0.26%	1.05%				12	0.65%	0.06%	0.64%			
13	0.87%	0.32%					13	0.59%	0.06%				
14	1.24%	0.37%					14	0.79%	0.06%				
15	1.25%	0.37%					15	0.79%	0.06%				
16	1.40%	0.37%					16	0.81%	0.06%				
17	1.42%	0.41%					17	0.81%	0.06%				
18	1.73%						18	0.90%					
19	1.83%						19	1.27%					
20	1.84%						20	1.27%					
21	2.04%						21	1.27%					

Our proxy data format has been accepted by major STS verification agents

PROXY DATA PROCESS

5 Stage process designed for data set optimisation

Initial Communication

ED and the client identify and discuss any extraordinary characteristics of the desired pool to be securitised. For instance:

- Origination years
- Occupancy type
- Interest rate type
- Guarantee type etc.



Deals Selection

ED selects a list of deals based on:

- completeness of data
- results of data quality checks
- the pool characteristics discussed

The list of deals is then shared, and modified based on client feedback



Proxy Loans Selection

A subset of the underlying loans (based on the characteristics portfolio to be securitised) from the selected deals are taken as proxy loans. Their historical performance data is compiled

edcode	deal name	vintage
RMBXX12345678912XXXX1	ABC 2014	2014
RMBXX12345678912XXXX1	XYZ 2014	2014
RMBXX12345678912XXXX1	ABC 2015	2015
RMBXX12345678912XXXX1	XYZ 2015	2015
RMBXX12345678912XXXX1	ABC 2016	2016
RMBXX12345678912XXXX1	XYZ 2016	2016
RMBXX12345678912XXXX1	ABC 2017	2017
RMBXX12345678912XXXX1	XYZ 2017	2017
RMBXX12345678912XXXX1	ABC 2018	2018
RMBXX12345678912XXXX1	XYZ 2018	2018
RMBXX12345678912XXXX1	ABC 2019	2019
RMBXX12345678912XXXX1	XYZ 2019	2019



Result: Proxy Data

Final Performance Dataset

The final performance dataset includes static Default/Loss and dynamic Arrears information

- Static pools are based on the year of securitisation
- Since each portfolio to be securitised has a unique set of characteristics, ED applies principles of good judgement while being transparent



Adjustments to the data

Dataset from each selected deal is scrutinised further for quality

Any idiosyncratic reporting practices in a deal are adjusted to one standard.

Any outlying results are investigated and discussed with the relevant ED analyst



PROXY LOANS SELECTION AND ADJUSTMENTS TO THE DATA

Prior to merging datasets from different deals, each dataset is scrutinised further for data quality. Examples include:

- Loan Identifier changes
- Duplicate data
- Dropped loans
- Decimal point issues

Any idiosyncratic reporting practices of a unique deal are adjusted. Examples include:

- Default definition
- Reporting of Months in Arrears
- Reporting of Inactive loans

Any out of the ordinary results are investigated and discussed with the relevant Deal Analyst (e.g. high repurchases, zero defaults etc.)

Investor Reports and other transaction documentation is referred to for reconciliation

If needed, complementing statistics are included as part of the final performance dataset

Proxy Data Loan Selection Subset Sample

edcode	deal name	vintage
RMBSXX12345678912XXXX1	ABC 2014	2014
RMBSXX12345678912XXXX1	XYZ 2014	2014
RMBSXX12345678912XXXX1	ABC 2015	2015
RMBSXX12345678912XXXX1	XYZ 2015	2015
RMBSXX12345678912XXXX1	ABC 2016	2016
RMBSXX12345678912XXXX1	XYZ 2016	2016
RMBSXX12345678912XXXX1	ABC 2017	2017
RMBSXX12345678912XXXX1	XYZ 2017	2017
RMBSXX12345678912XXXX1	ABC 2018	2018
RMBSXX12345678912XXXX1	XYZ 2018	2018
RMBSXX12345678912XXXX1	ABC 2019	2019
RMBSXX12345678912XXXX1	XYZ 2019	2019

RESULT: FINAL PROXY DATA SAMPLE

The image shows two overlapping Excel spreadsheets. The top spreadsheet, titled 'Dynamic Arrears and Static Default-Loss Data - Read-Only - Excel', displays a list of quarters and their corresponding 'Not Delinquent' percentages. The bottom spreadsheet, also titled 'Dynamic Arrears and Static Default-Loss Data - Read-Only - Excel', displays a detailed data table with columns for 'Quarters after securitisation' and 'Year of Securitisation' (2014-2019), showing various percentage values.

Quarter	Not Delinquent
2014-01	100.00%
2014-02	98.84%
2014-03	99.80%
2014-04	99.55%
2015-01	99.44%
2015-02	99.68%
2015-03	99.44%
2015-04	99.29%
2016-01	99.17%
2016-02	99.50%
2016-03	99.28%
2016-04	99.31%
2017-01	99.10%
2017-02	99.36%
2017-03	99.57%
2017-04	99.36%
2018-01	99.59%
2018-02	99.56%
2018-03	99.51%
2018-04	99.36%
2019-01	99.28%
2019-02	99.52%
2019-03	99.41%
2019-04	99.39%

Quarters after securitisation	Year of Securitisation							Quarters after securitisation	Year of Securitisation						
	2014	2015	2016	2017	2018	2019	2014		2015	2016	2017	2018	2019		
0							0								
1	0.00%	0.00%	0.06%	0.00%	0.02%	0.00%	1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
2	0.05%	0.00%	0.08%	0.00%	0.02%	0.02%	2	0.00%	0.00%	0.03%	0.01%	0.00%	0.00%		
3	0.06%	0.00%	0.11%	0.02%	0.03%	0.02%	3	0.00%	0.00%	0.31%	0.01%	0.00%	0.00%		
4	0.20%	0.03%	0.21%	0.06%	0.05%		4	0.00%	0.00%	0.37%	0.01%	0.00%			
5	0.25%	0.03%	0.24%	0.07%			5	0.00%	0.00%	0.47%	0.02%				
6	0.32%	0.07%	0.33%	0.13%			6	0.00%	0.00%	0.56%	0.03%				
7	0.43%	0.13%	0.74%	0.16%			7	0.05%	0.00%	0.56%	0.05%				
8	0.51%	0.15%	0.89%	0.19%			8	0.07%	0.00%	0.64%	0.05%				
9	0.52%	0.17%	0.91%	0.21%			9	0.18%	0.00%	0.64%	0.05%				
10	0.55%	0.23%	0.95%				10	0.35%	0.00%	0.64%					
11	0.62%	0.26%	1.08%				11	0.35%	0.00%	0.72%					
12	0.66%	0.26%	1.18%				12	0.45%	0.04%	0.84%					
13	0.87%	0.32%					13	0.59%	0.04%						
14	1.24%	0.37%					14	0.79%	0.04%						
15	1.25%	0.37%					15	0.79%	0.04%						
16	1.40%	0.37%					16	0.81%	0.04%						
17	1.43%	0.41%					17	0.81%	0.04%						
18	1.72%						18	0.98%							
19	1.83%						19	1.27%							
20	1.84%						20	1.27%							
21	2.06%						21	1.27%							

Q&A

AND NOW...

...DO YOUR OWN RESEARCH!

THANK YOU//CONTACT

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